SOFTWARE COVERED: 3DS MAX • BLENDER • MAYA • CINEMA 4D • POSER • VUE

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3DArtist

11

Practical inspiration for the 3D community

• Studio Access

ASSASSIN'S CREED II

Discover how those gorgeous visuals of Venice were created

• Tutorial

MASTER HAIRFX IN 3DS MAX

How to use the 3ds Max plug-in to create authentic animal fur

FREE DISC $282 OF MODELS

• Learn to

COMPOSITE MODELS

Blend Poser models with photos and Vue lighting

• Review

E-ON VUE 8

As used for *Indiana Jones* and *Terminator Salvation*

ON YOUR FREE CD

BlueBrain3D Animals and clothing
HMS Victory Set sail with this model

• Step-by-step Blender tutorial

Organic modelling

How to create small, fleshy creatures

• Your questions answered

Cloth dynamics

Create realistically draped clothing

Plus: Combining massive levels in 3ds Max, how to create a pitch for 3D work

Reviews: e-on Vue 8, Autodesk Softimage 2010, Mudbox 2010

inside

LEARN HOW TO CREATE

PERFECT SKIN

Use subsurface scattering to create realistic skin tones

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Liam Kemp

Personal portfolio site
www.liamkemp.com

Country UK

Software used
3ds Max and Brazil

Cover artist

One of our main tutorials is about creating perfect skin and expressions, which made this image a natural selection for the cover. Liam's version of an ideal *Maxim* cover girl features incredibly realistic skin textures.

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Welcome

to the magazine and 116 pages of amazing 3D

Every issue you can count on...

1. **116 pages of creative inspiration**
2. Behind-the-scenes guides to images and artwork
3. **A CD packed full of creative goodness**
4. Interviews with inspirational artists
5. **Tips for studying 3D or getting work in the industry**
6. The chance to see your art in the mag!

The dark art of pitching for 3D work is one of those subjects that can be a real hurdle for artists and small studios. In our feature article, we take a look at what is involved for the little guy who wants to get a slice of the 3D pie. We also talk to a photographer who has picked up CINEMA 4D and put it to use with his studio photography. Studio Access goes behind the scenes of *Assassin's Creed II*, while on the tutorial front we have everything from tropical creatures to creating the perfect face, even constructing the end of the world with massive, multiple layers. Whatever your interest, there's something for everyone inside this issue of 3D Artist.

Duncan Evans, Editor

This issue's team of expert artists...

Jacob Charles Dietz

JCD has been mixing Poser models with Vue rendering to create a seaside image in the style of Jack Vettriano

Christian Darkin

Christian explains how to get your foot in the door when pitching for work, whether you're an artist or studio

Paul Francis

Cloth simulation is the task of Paul in the Poser Q&A room. Discover how to animate and drop cloth realistically

Lance Hitchings

Lance runs a design studio in the States, and also comes up with solutions for all your general Maya-related problems

Dominic Davison

This month our resident Vue Q&A panel expert explains how to create low-lying fog in your Vue scenes

Daniel Lovas

The guy with CINEMA 4D in his DNA takes terrain data from Google Earth and turns it into a landscape

April Madden

April is deputy editor on **Digital Artist** magazine and a graphic artist. We make her review all kinds of books

Jian Xu

Want to know how to make a tiger so lifelike you'll think it's a photo? Come hither for this furry 3ds Max tutorial

Rosie Tanner

Bringing you all the courses and galleries from the universities, it's our Rosie, the editor of **Photoshop Creative** magazine

Tom Rudderham

Taking over the helm of the Community News is our friendly multimedia editor, Tom. See what he's discovered this issue

Alex Lashko

With a little bit of magic here and a dose of subsurface scattering there, Alex has created perfect skin tones

Robert Kenneth Sharo

If you haven't had enough destruction with *2012*, then here's some more courtesy of Robert's multilayered tutorial

Sign up, share your art and chat to other artists at

www.3dartistonline.com

3DArtist

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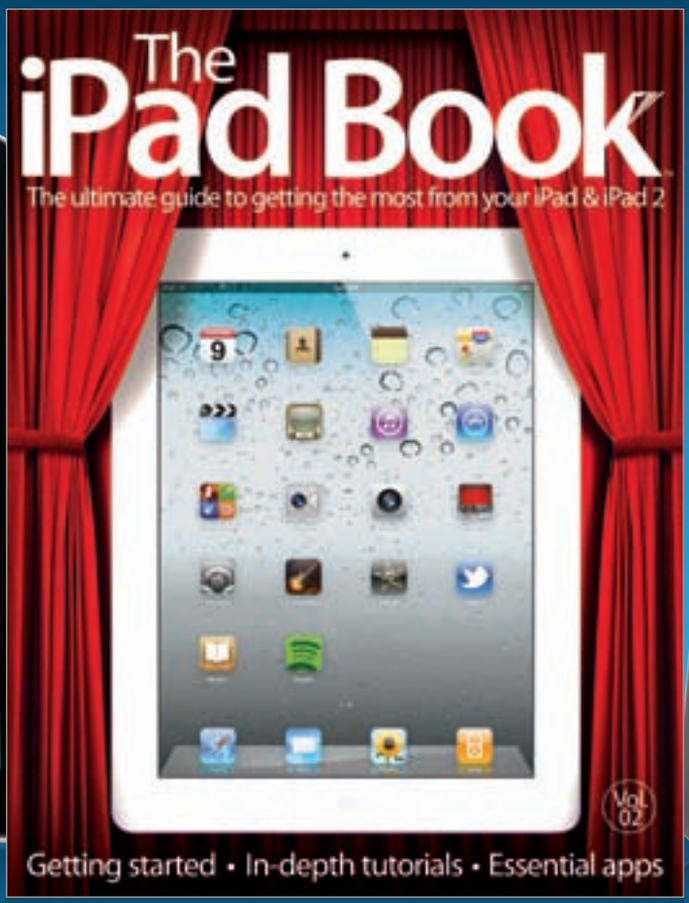
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Discover how these images were created...

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Create perfect skin tones

"Maya was used to create the base mesh as well as the main renderer"

Four-page behind-the-scenes walkthrough guide

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“The concept was to capture a young couple standing on the tide flats in that brief moment just before the sunset”

Jacob Charles Dietz on the idea behind *Laguna*. **Page 58**

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Discover how Blender was used to make these little creatures

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Superb architectural visualisation of a suburban housing project

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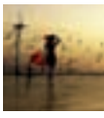
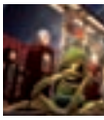
Use Poser and Vue and composite the results with a photo to create a Jack Vettriano style seaside image



66 I made this: Tommaso Sanguigni, *Did you fill up?*
The aliens have run out of petrol in this humorous image



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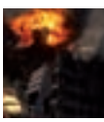

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There's even more inside...

Turn the page to discover the interviews, reviews, industry advice and more that we've packed into this issue...

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You don't want to miss an issue and it will save you lots of cash

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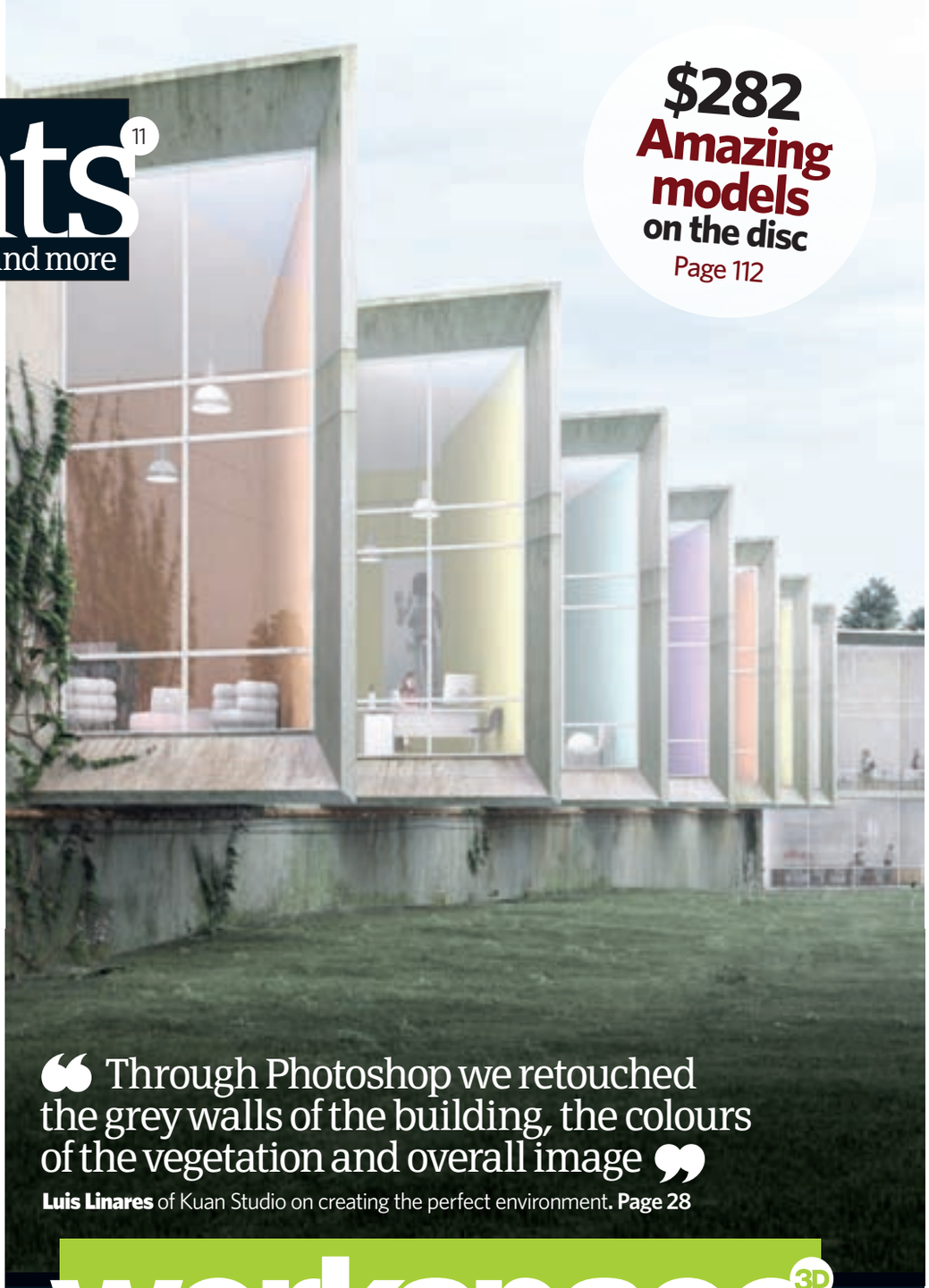

$282 Amazing models on the disc
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"Through Photoshop we retouched the grey walls of the building, the colours of the vegetation and overall image"

Luis Linares of Kuan Studio on creating the perfect environment. **Page 28**

workspace 3D

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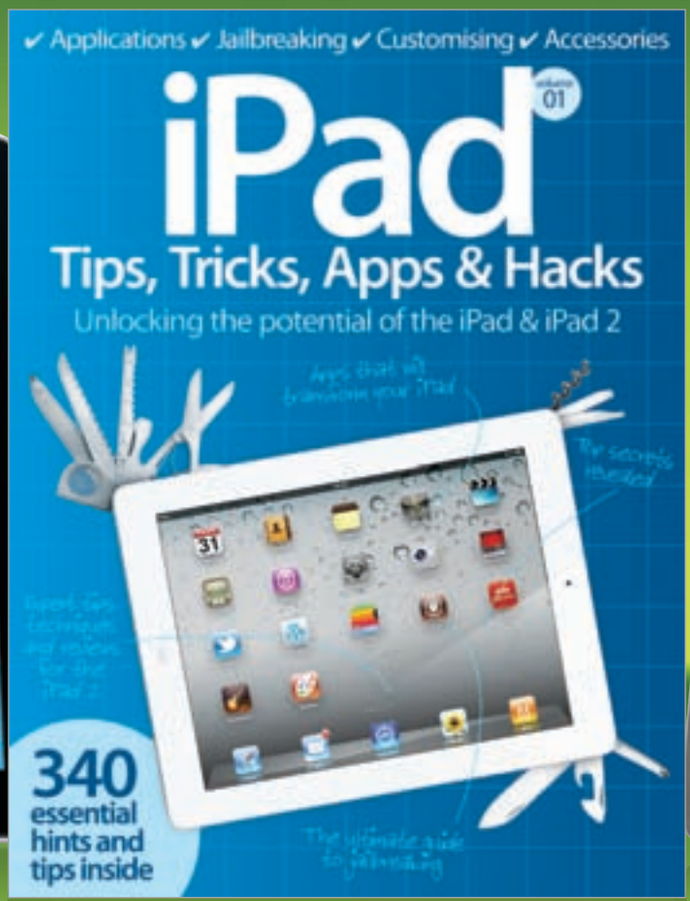

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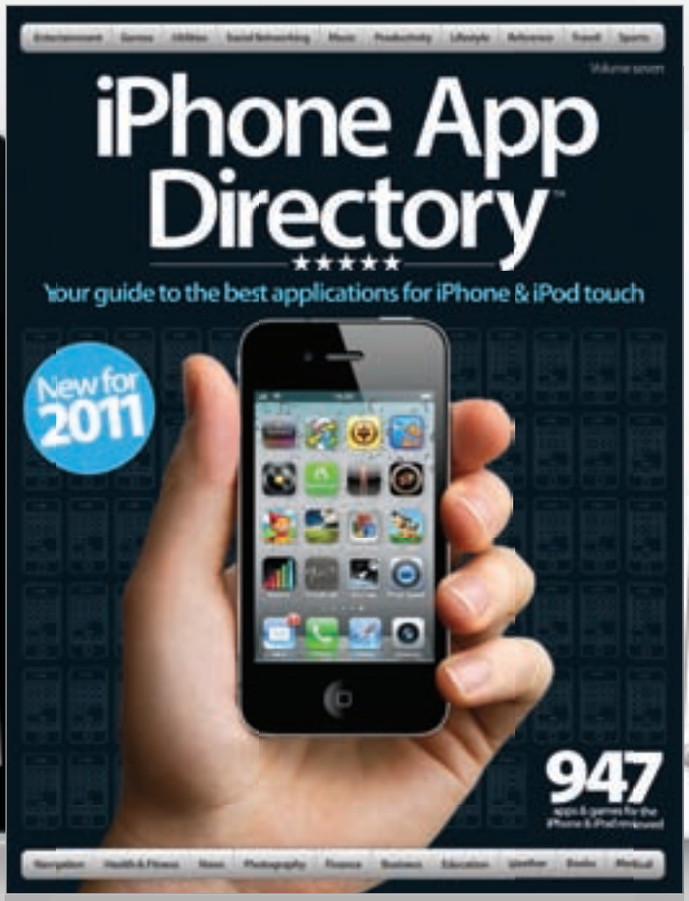

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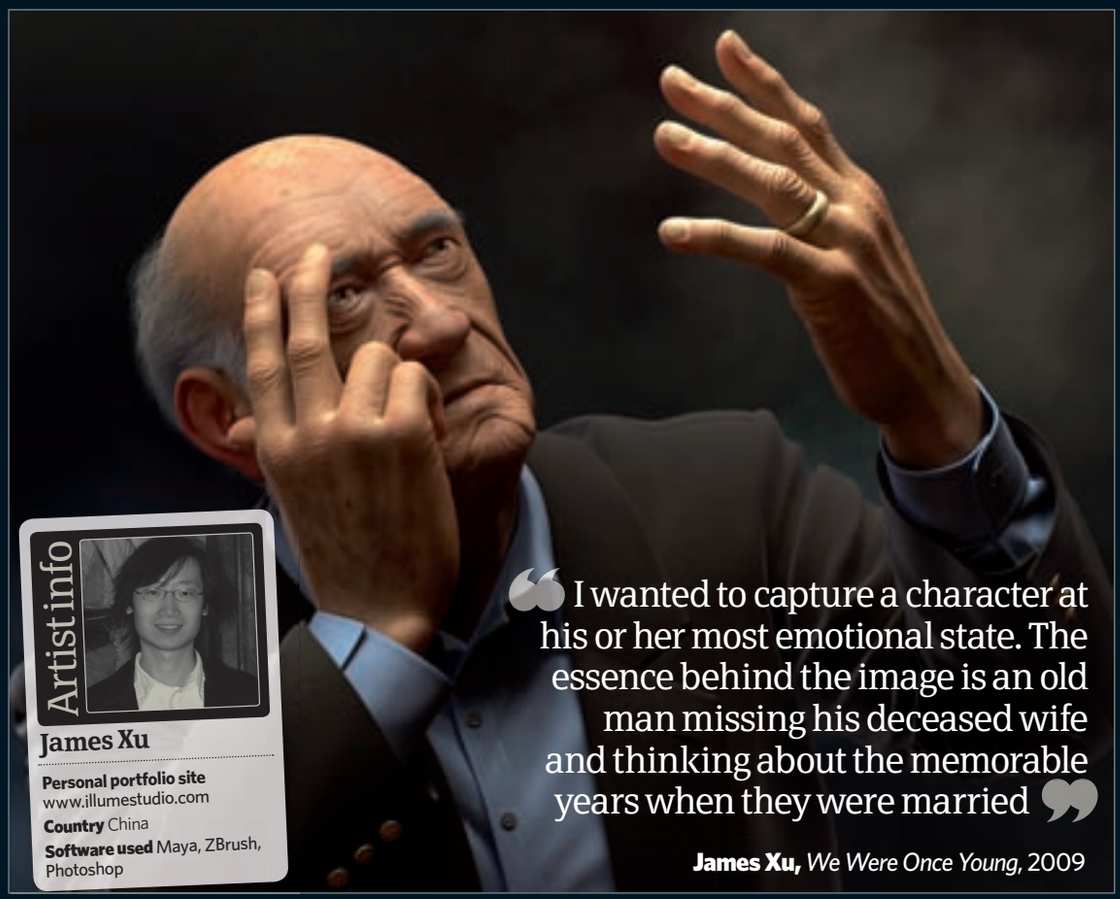
WELCOME TO THE GALLERY

Nine pages of great artwork from the 3D community

Images we love!



Artist info

James Xu

Personal portfolio site www.illumestudio.com

Country China

Software used Maya, ZBrush, Photoshop

"I wanted to capture a character at his or her most emotional state. The essence behind the image is an old man missing his deceased wife and thinking about the memorable years when they were married"

James Xu, *We Were Once Young*, 2009

Featured artists

James Xu
The face tells the whole story in this beautiful, poignant image

Jesse Sandifer
A brave warrior battling his way through the eye of the storm

Morteza Najafi
A parting in the clouds provides a ray of light on a dark place...

Orlin Nikolov
An unstoppable future robot... Arnie's got nothin' on this guy!

Robert J. Tiess
Admire the surface textures in this wonderfully crafted image

Mohammad Hossein Amini Yekta
A top-end composition for a top-end car

REDVERTEX Ltd
You can't afford to miss Pavel and Miki's render of poetry in motion

Get your artwork featured in these pages

Simply send it to the **3D Artist** Gallery. Here's how...

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Hang your art in our online gallery and get selected for the magazine

1. Register with us

Check out the website below and click on Register. Choose a username and password and you're ready to go.

www.3dartistonline.com

2. Upload your images

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3. Tell us about them!

Have an image you feel passionate about? Drop editorial an email at **duncan.evans@imagine-publishing.co.uk**.

Email or post

You'll be missing out on a thriving 3D community, but if you'd rather submit your work by email or post, here's how. Make sure your image is at least 3,000 pixels on the longest side, save it as a maximum quality JPEG or zip it up as a TIFF and email it to the address below. Please include your contact details! If you've created a Pixar-beating animation and want to see that featured on the cover CD, then save it onto a CD and post it to us. You can also send your images on CD. The addresses are:

duncan.evans@imagine-publishing.co.uk

The Gallery, 3D Artist, Imagine Publishing, Richmond House, 33 Richmond Hill, Bournemouth, Dorset, BH2 6EZ

Comment on more great 3D art...

Head straight over to **www.3dartistonline.com**, register and you can leave comments for other artists. Some of the people featured here already have their galleries, so get online and join our club!

Create your gallery today: www.3dartistonline.com

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“I created this character initially for a speculative movie poster for *Mandalay* where he's taking on a couple of giants, but thought I would isolate him out here to have his heroic moment. I wanted to express David as a majestic fighter and that he's been in quite a battle but is still standing. It was an exercise in colour, composition, 2D painting as well as blending 3D with 2D digital media. David is 3D but his hair and the environment are hand-painted in Photoshop”

Jesse Sandifer *David – Hero*, 2009

Artist info

Jesse Sandifer

Personal portfolio site www.jessesandifer.com

Country USA

Software used ZBrush, 3ds Max, Photoshop, V-Ray

Work in progress...

The team Loves

“So this is how they harvested the crops back then! No? Well, it's full of atmosphere, if not of an agricultural nature!”

Jo Editor in Chief

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The team Loves

What it takes to achieve realistic clouds is often underestimated, and this is a brilliant example of contrasting light in a CGI image

Duncan Editor

Modelling and texturing was done in Maya, while the render was developed using mental ray. The length of rendering was two hours. Environment creation was done using Photoshop and Apple's Shake. I think my main problem in this work is the top polygon in the image, which I had to separate into parts so that I could render the image

Morteza Najafi, *Salvation*, 2009

Morteza Najafi

Personal portfolio site www.didarfilm.com, www.tucanimation.com

Country Iran

Software used Maya, mental ray, Photoshop, Shake

Work in progress...

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“I was going for the robotic look and wanted to fuse together the mechanical and organic parts to create a bionic soldier. Then I designed a warzone environment as a background to ignite the essence of this character. It was exciting and challenging to create this scene and I hope others will also enjoy it”

Orlin Nikolov, *Bionic Soldier,* 2009

Artist info

Orlin Nikolov

Personal portfolio site
www.orlinsvision.com

Country Bulgaria

Software used 3ds Max, ZBrush, Photoshop

Work in progress...

The team Loves

“Each part of this robot's formidable armour is uniquely modelled, coming together as a whole to form an intimidating bionic soldier, destroying all in its path”

Duncan Editor

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The team Loves

A rich colour palette suits the environment for this richly toned mechanical bird. The details in the eyes, beak and joints especially are outstanding!

Jo Editor in Chief

Artist info

Robert J. Tiess

3DArtistonline.com
Username RobertT

Personal portfolio site
www.artofinterpretation.com
Country USA
Software used Blender

Work in progress...

This biomechanical bird peers curiously out to the world beyond the Forest of Fixities, inquisitive and inspired to soar over unexplored realms

Robert J. Tiess, *Branching Out,* 2007, revised 2009

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The team Loves

This is one especially for the boys – there's a real *James Bond* vibe, thanks to the expensive car and European city backdrop. Technically, the angle completes the shot

Ross Head of Design

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“This Jaguar concept was designed for a car design exhibition, which was held in Tehran in April 2009. This concept’s style was framed based on Sixties and Seventies Jaguar models and inspired by the jaguar animal. The styling of this concept took three weeks, and the 3D modelling and rendering was completed in just four days”

Mohammad Hossein Amini Yekta, *Jaguar CXJ,* 2009

Artist info

Mohammad Hossein Amini Yekta

Personal portfolio site www.c1dg.com

Country Iran

Software used 3ds Max, V-Ray, Photoshop

Work in progress...

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The team Loves

"It's not easy to capture motion in a still 3D image, so all credit to the team at REDVERTEX"

Jo Editor in Chief

Artist info

Pavel and Miki, REDVERTEX Ltd

Personal portfolio site
www.red-vertex.com

Country Russia

Software used 3ds Max, V-Ray, GuruWare Ivy, Photoshop

Work in progress...

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“Mesemvria is the old Roman name of the town. It took two weeks to complete this project. The brief was to create images full of passion and atmosphere. It should be completely finished in 2012. All the elements are 3D. In Photoshop we just added the humans and made some colour corrections. The 3D modelling and texturing were done simultaneously in 3ds Max. We always render with V-Ray, 10-12MP and high settings, while we render masks for every material”

Pavel and Miki – REDVERTEX Ltd, *Mesemvria Moods*, 2009

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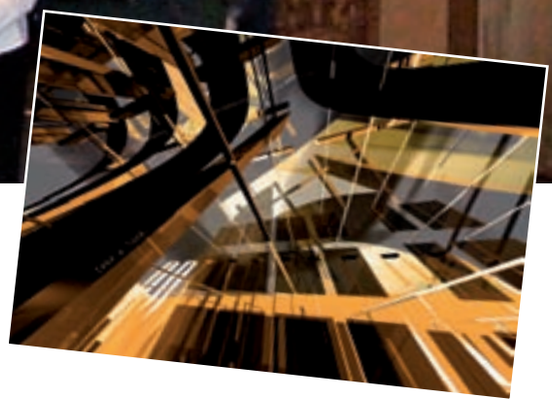

Talent praised

Students are recognised for their modelling and design skills

Rebecca Pitt's winning model, titled *Moving Letters: The Royal Mail Museum Wall*

Rewarding the talents of student projects using form-Z, AutoDesSys held the 17th Annual Awards Banquet in Chicago during the Association of Computer Aided Design in Architecture conference. The awards were split into five categories: Architectural Design, Urban Design, Interior Design, Fabrication and Visualisation.

The event is held each year to encourage new architectural designers to the world of 3D. Winners receive awards of distinction and honourable mentions, and their projects can be viewed at the form-Z website (www.formz.com) in both video and PDF format.

Entries were received from all over the world. Rebecca Pitt, a student from the University of Wales Institute in Cardiff, took the distinction award for Interior Design with her project titled *Moving Letters: The Royal Mail Museum Wall*. It's a complex, multilayered rendering of Pitt's interpretation of how the museum – currently in the planning stage – might look.

Chris Yessios, president of AutoDesSys, remarked: "We are happy to know that the students we have been awarding are very much part of this younger generation of designers that are playing such a pivotal role in the evolution of our contemporary architectural culture. Older generations of designers are still uncomfortable with computers; however, they have learnt that no matter how daring their initial sketches may be, some young architect will be able to translate them into something constructible."

The list of winning schools can be seen at www.autodessys.com, along with PDF files of the winning entries and details for each student and respective tutor.

> "The event is held each year to encourage new architectural designers to the world of 3D"

3DArtist online.com

Know anyone who won one of these awards? Discuss this and more with other 3D artists at **www.3dartistonline.com/forum**

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3D web update

New sites and changes to your favourites – it's all here!

Cloud rendering

Cloud computing is slowly creeping into everyday use. Now NVIDIA has announced its own service for rendering images and video in real-time within the cloud – called NVIDIA RealityServer.

The service is a culmination of nearly 40 collective years of hardware and software engineering by both NVIDIA and mental images. Using iray rendering technology, RealityServer is the first web-based service to enable anyone to interact with complex 3D models and environments under customisable lighting conditions in real-time.

A developer edition of RealityServer 3.0 is available to download from **www.nvidia.com/object/realityserver.html**.

Classic design

The123d.com hosts a collection of 3D models for professional artists. Recently, the website has added a collection based on Mies Van Der Rohe's design for Farnsworth House, titled Bauhaus Furniture. The set includes an environment to render the pieces of furniture inside, and for easy management the furniture models are split into five packages. Each model comes fully textured with all materials applied. The models are also optimised and ready to be dropped in a scene. Supported file formats include MAX, 3DS, OBJ and LWO. Priced $99, you can find the model by searching for Bauhaus Furniture at **www.the123d.com.**

A lifelike render

Masterpiece

Home comforts

Vasyl Milhay, an interior designer from the Ukraine, has made quite the impression on 3D Artist

Vasyl Milhay www.arch-creative.com

Vasyl Milhay's image *The Kitchen* was included in issue seven, and now his latest piece *Hall* has been awarded Picture of the Week at the 3D Artist site.

Milhay explained how he created the image: "I made the hall and kitchen separately, using 3ds Max and V-Ray, then combined the two rooms for rendering." Revealing how long the project took, he said: "The whole project, including ArchiCAD drawings, lasted four months."

You can see more of Milhay's work at his website www.arch-creative.com.

LightWorks competition

Joint winners for the latest contest

LightWorks has announced the joint winners of the latest LightWorks Image Competition. Alex Bonner, a design engineer working for JCB, won with his rendering of three JCB Teletruks 35D 4WDs. South African-based Marius Louw used the Caddie Vio plug-in, which incorporates LightWorks rendering technology, to create his entry of a lounge environment. After learning he'd won the joint first prize, he remarked: "For me Caddie Vio brought the whole 3D picture together, allowing me to bring my renders to life without the need for any postprocessing." The competition is ongoing, with winners chosen every quarter. Visit **www.lightworkdesign.com/gallery/image_competition** to take part.

Short films

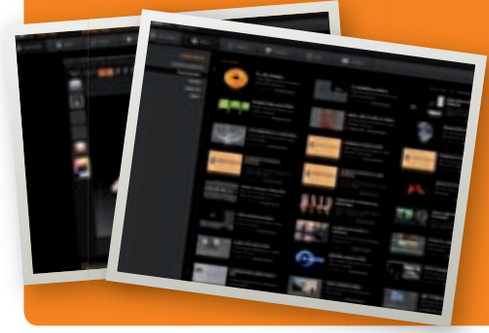
The 82nd Academy Awards finalists

The Academy of Motion Picture Arts and Sciences has announced the ten short animated films that have advanced to the voting process for the 82nd Academy Awards. Among them is Pixar with its 'Partly Cloudy' film, directed by Peter Sohn. Also notable is 'French Roast', a 3D short directed by Fabrice O. Joubert.

The Short Films and Feature Animation Branch members will now select five nominees from the short list of ten to go through to the actual Oscars. The results will be announced 2 February 2010. The full list can be found at the Oscars website (**www.oscars.org**).

Website of the month

cmiVFX www.cmivfx.com/store



A specialist in supplying video tutorials for visual effects and computer graphics artists, cmiVFX prides itself on being the first to offer advice on new visual effects and applications.

The website is easy to navigate and offers thousands of hours of video tuition. You'll find a wide range of subjects, from taking 2D images in order to form a 3D matte painting to working with subsurface scattering.

To help introduce **3DA** readers to the site, the company has offered a 30 per cent discount. Select one or more videos and enter the code 3duser30 at the above link.

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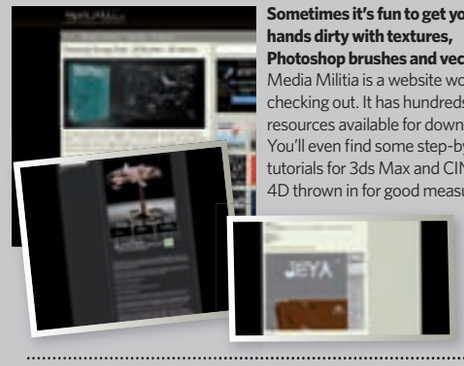
Free 3D Resources

Free 3D resources

Feeling the need for some inspiration? Check out these sites for free inspiring resources

Media Militia

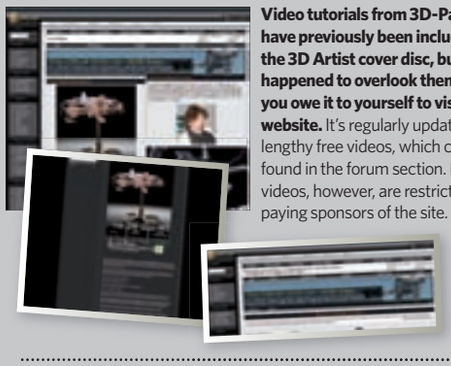
More focused on art than 3D, but nevertheless a great site to stop by
Web: http://mediamilitia.com/



Sometimes it's fun to get your hands dirty with textures, Photoshop brushes and vectors. Media Militia is a website worth checking out. It has hundreds of free resources available for download. You'll even find some step-by-step tutorials for 3ds Max and CINEMA 4D thrown in for good measure.

3D-Palace

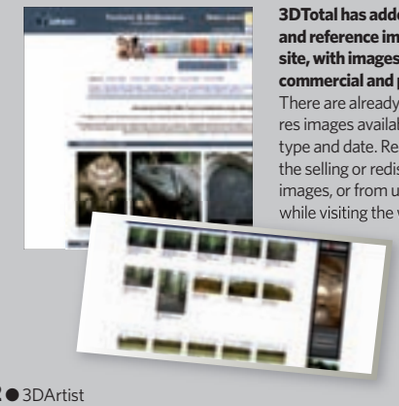
A friendly community-based website, with a fantastic supply of videos and models
Web: www.3d-palace.com



Video tutorials from 3D-Palace have previously been included on the 3D Artist cover disc, but if you happened to overlook them then you owe it to yourself to visit the website. It's regularly updated with lengthy free videos, which can be found in the forum section. Newer videos, however, are restricted to paying sponsors of the site.

3DTotal's free textures

A wealth of free professional textures and images
Web: http://freetextures.3dtotal.com/



3DTotal has added a free texture and reference image library to its site, with images available for both commercial and private usage. There are already over 15,000 high-res images available, categorised by type and date. Restrictions prevent the selling or redistributing the images, or from using an ad blocker while visiting the website.

Free models – for a few

Professional meshes up for grabs for anyone who just can't wait

Ballistic has opened pre-orders for *d'artiste Character Modeling 3* – one of the finest books for learning about professional modelling techniques. That in itself is nothing to shout about, but with this third iteration the first 500 customers to place an order will receive two featured characters from the book as downloadable high-resolution meshes. These are Giovanni Nakpil's quadruped creature, and Cesar Dacol Jr's Pond Guardian creature.

It's an opportunity to learn the modelling process at first hand, and one not to be missed. Visit www.ballisticpublishing.com/books/dartiste/character_modeling_3 to sign up.

The limited edition book cover

work in progress

Music video extraordinaire

Director and visual effects artist Sil van der Woerd has been working with Gnomon students on his latest music video for singer Lolly Jane Blue

Sil van der Woerd www.silvanderwoerd.com

Working with Gnomon School of Visual Effects students to create his latest music video for singer Lolly Jane Blue, director Sil van der Woerd has created a video that integrates live-action footage with complex digital sets.

van der Woerd enjoyed working with the students, as he explains: "I was really blown away at how flexible and well rounded the students were. The dedication to not just get it done but to get it done perfectly was apparent from the start."

van der Woerd is currently preparing a making-of DVD with The Gnomon Workshop. For now, the finished video is available to view at www.gnomonschool.com/student_work/group_projects/whiteswan.php.

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Artist spotlight

Teaching others

A generous artist gives back to the community – we caught up with him to see how his work was progressing

Kristopher Lee www.vertexcomplex.com

Included on the 3D Artist issue eight CD was none other than two hours of video tuition from the talented modeller and artist Kristopher Lee. Since then he's continued to work on further video tutorials, animations and models, as he explains: "I'm actually finishing up a free set based on creating a quick cartoon fly in Maya. Other than that, I am tying up loose ends on my *Architectural* DVD set; the first two of four parts are completed and are on my website."

You can find a wealth of DVD sets, models and more at Kristopher's website, **www.vertexcomplex.com**, and his free videos at **www.3d-palace.com**.

Software shorts

Get the lowdown on updates and launches

Eye Candy 6 out now

Alien Skin has released Eye Candy 6, its collection of 30 high-quality filters for Photoshop. New to this release is support for multicore CPUs and the 64-bit version of Photoshop. Also included are improved presets that automatically adapt to the image size. More information can be found at the product's website, www.alienskin.com.

ProUV updated

ProUV 1.1 has been released for the ZBrush community. The plug-in features a heavy-duty automatic UV unwrapping algorithm to enable higher texture detail. It significantly improves upon existing GUV and AUV ZBrush unwrapping solutions. New to version 1.1 is support for ZBrush 3.5 R2 and Windows 7. http://speedy.rs/prouv/.

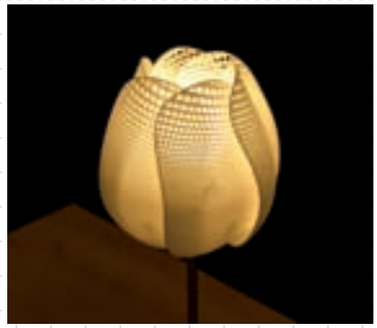
Tools of the trade

I.MATERIALISE

Get your models printed in 3D

Ever wondered how your 3D model would look and feel if it were a physical object? If so, i.materialise has something special in store for you. Using a 3D printing process, the company can take your Blender or Rhino CAD package (more plug-ins are on the way) and sculpt it into a real object.

The printing usually takes about ten days and there's a choice of 11 materials, including polyamide, alumide and polycarbonate. Currently, the process is in beta with a discount determined on file complexity and material choice available for new customers. Head to http://i.materialise.com/ to find out more.



A 3D model made real

3DArtist online.com

Create your gallery, browse the artwork, chat with experts and artists and get tips and techniques at

www.3dartistonline.com

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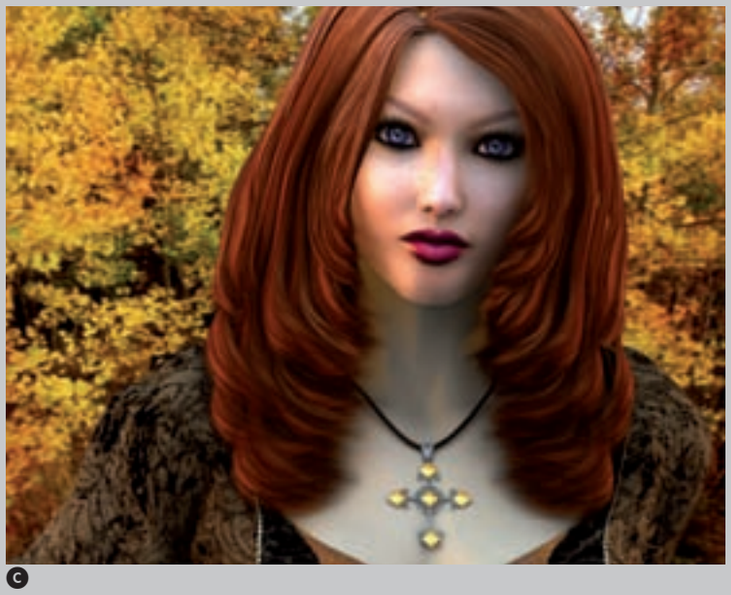
Picture of the month

Roll up, roll up, take your seats ladies and gentlemen for the travelling 3D Artist Gallery

A

B



C

A Worn and Rusty Citroen HY Van

» **Antonio Milo**

Antonio says: "I always wanted to make a worn and rusty version of this van."
We say: The van has that dilapidated, run-down feeling that goes perfectly with the country surroundings.

B Winter in North Antwerp

» **Dominic Davison**

Dom says: "Rendered with Vue 6 with models from 3D Warehouse, Cornucopia and DAZ."
We say: Only reason it didn't win a Picture of the Week award is because your mantelpiece is bulging with them already. Superb wintery image.

C Autumn's Daughter

» **Roger Kilian**

Roger says: "Leaves are really starting to turn here in the mid-Atlantic, Thanksgiving is just around the corner."
We say: Well, Thanksgiving has now come and gone, but it doesn't stop this from being a striking portrait with fabulous colours.

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3DArtist online.com
www.3dartistonline.com
to view the art and chat to the artist

D Where's she looking?
» **Joseph Langmuir**
Joe says: "I created this image to practise skin shading and hair rendering, using mental ray's fast skin shading and Shave And A Haircut. I wanted to challenge myself and create skin that had flaws and blemishes in order to create an ordinary, beautiful girl."
We say: Great modelling, creative framing and a very expressive face. Good job!

Pictures of the week

THESE ARE THE IMAGES THAT WERE AWARDED PICTURE OF THE WEEK IN THE LAST MONTH

Carcharodon Sapiens
» **Alessandro Briglia**
Alessandro says: "I made the basic model in 3ds Max and refined the shape in ZBrush. I applied textures and the final pass in Photoshop."
We say: Great modelling and an outlandish concept that really works well.

Tuskegee Airmen
» **Kurt Miller**
Kurt says: "The Tuskegee Airmen were the first determined young black Americans to fight as pilots in WW2. Image created in 3ds Max, Bryce 3D and Photoshop with a Wacom tablet."
We say: Dramatic and action-packed aerial image.

Hall
» **Vasyl Mihay**
Vasyl says: "One of a series of interior images that was modelled and rendered in 3ds Max using the V-Ray rendering engine."
We say: Fantastic detail and a subtle colour scheme throughout.

WW IV
» **Kurt Miller**
Kurt says: "Cover art for a WWIV board game. Partisan and rebels on the left of the king and the government military on the right. Image created in 3ds Max, Bryce 3D and Photoshop."
We say: Great central character and lots going on in the background to keep your attention.

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Have your say

Write, email or use the website forums to get in touch about the magazine, your problems or triumphs

Send your letters to...

Email the team directly with your letter
3dartist@imagine-publishing.co.uk

Log in and leave your comments on the forum
www.3dartistonline.com/forum

POST TO:
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Imagine Publishing,
Richmond House,
33 Richmond Hill,
Bournemouth,
Dorset
BH2 6EZ, UK

Reds 3 Ship
Gordon Bain's majestic image of the Red Arrows doing what they do best – performing gravity-defying stunts

Max to the max

I am writing in relation to the two hours of free 3ds Max tutorials on issue 8's cover CD.

I would just like to say that in the years I have been buying 3D magazines – both yours and *3D World* – these were by far the most useful and informative tutorials I have ever come across. I class myself as an amateur at best and just do it for a hobby, but the way it was all laid out and described meant that even I could render out what for me was a very professional-looking piece. If you have any other tutorial work by that guy I would love to see some more, as not only myself but also a lot of my friends bought that issue once I told them about it, and all think as I do about it.

Stuart, by email

Glad you enjoyed it and found it useful. I've passed your comments on to our disc department, so hopefully they'll have more from the same chap

Red Arrows

There is still a little work to do on this image with texturing and lighting, but I thought I would drop you a line to find out if it would be of any use to you. The lead aircraft is depicted as Red 1 of the new team leader for 2010, Squadron Leader Ben Murphy. The BAe Hawk was modelled in CINEMA 4D, BodyPaint, Photoshop and Poser. Hope you enjoy it.

Gordon Bain, Ditchling, Sussex

Nice work again, Gordon. It certainly captures the spirit of the Red Arrows.

Which software?

As a new subscriber to your mag, I have been inspired by your articles and featured artists. So now I want to have a go. The only trouble is I don't know where to start with software. So how about including an idiot's guide? How about comparing like-for-like software? Maya, 3ds Max and CINEMA 4D seem to pitch to similar markets, so I would like some advice on which one is best for a small team or an individual to create 3D artifacts, to animate and to make short films?

Dougaireed, via the forum

We carried a feature on just this subject in issue 10. If you missed out, go to ***www.imagineshop.co.uk*** *to order a back issue while they are still available.*

It's a machine's world

I enjoyed your recent feature about Machinima, but I don't agree that the idea of being 'good enough' is paramount to its existence. It is true that Machinima visuals can often leave a lot to be desired, but this is because Machinima movies are entirely created and rendered on PCs rather than industrial-class render farms. That, and the fact that the graphics engines of most computer games are not built with making movies in mind. However, that doesn't mean that the Machinima director abandons all desire for quality.

Things are improving with the emergence of dedicated tools like Moviestorm, which combine the graphics engine of computer games with very capable camera controls. The result is that Machinima movies are becoming increasingly sophisticated from a visual standpoint.

But I do agree with your observation that anybody can do it. And the thrill of seeing your own creation on the big screen is well worth the long, lonely hours hunched over the keyboard trying to set up the money shot!

Iain Frier (IceAxe), by email

Actually, I agree with you – it's all down to the story you want to tell. Mind you, have a look at iClone4. It has better graphics than a game engine and is easier to set up and control.

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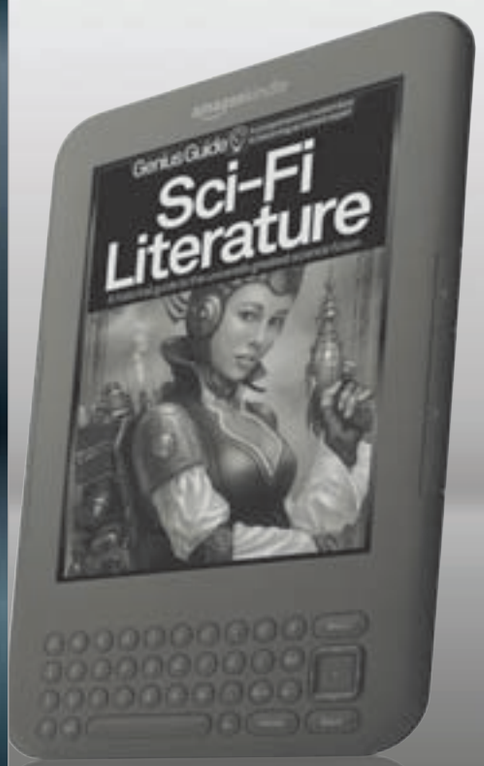

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Duncan Evans talks to Luis Linares of Kuan Studio about the philosophy of his new architecture company, based in South America

A *Interior Bridges*
"Watching a classic movie in a modern space"

The art of contemplation

Company Kuan Studio
Founded May 2009
Company website www.kuanstudio.com
Country Uruguay
Software used 3ds Max, V-Ray, Photoshop, After Effects and AutoCAD
Expertise 3D animation
Client list Images of products for a design studio in Barcelona, Spain, architects in Switzerland, architects and real estate group investors in Panama, architects in Uruguay and Argentina

> "Currently, we focus on architectural visualisation and products in 3D, but our next step is audiovisual postproduction and videogames"
>
> **Luis Linares** is the co-founder of Kuan Studio

It was as recent as 2009 that three men, Agustín Gutiérrez, Rodrigo Peña and Luis Linares, decided to get together and form Kuan Studio in Montevideo, Uruguay. The name Kuan comes from the Chinese classic text of the *I Ching*, meaning contemplation, with which the team feel an affinity. It was their common vision and the same passion, which is excellence in the visual communication of projects, that brought them together to form Kuan.

Contemplating the project and listening to the client are key elements at the studio, as they share opinions in order to reach the best artistic result. To achieve this, they concentrate on taking care of details and have a deep sense of loyalty and a responsible commitment to the job. Each member of the team has a specific role on each project: the project manager is responsible for each project to assess and follow up to the final product, and is also the

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> The name Kuan comes from the Chinese classic text of the I Ching, meaning contemplation, with which the team feel an affinity

Key Project
Advertising office

This is a personal project inspired by the Facebook offices, with which we were very pleased. We looked at all the details in the modelling phase, from the smallest to the largest, working on all the vegetation in 3ds Max and V-Ray.

We sought the light that you get from a cloudy sky, with little direct sunlight on the scene. We decided that we wanted the interiors of the offices seen through the windows to appear relaxed, because this is an advertising agency and did not need to be formal.

In postproduction, the details in different parts of the building and the environment are greatly enhanced. Through Photoshop we retouched the grey walls of the building, the colours of the vegetation and overall image to get a result that blends serenity and simplicity in architecture.

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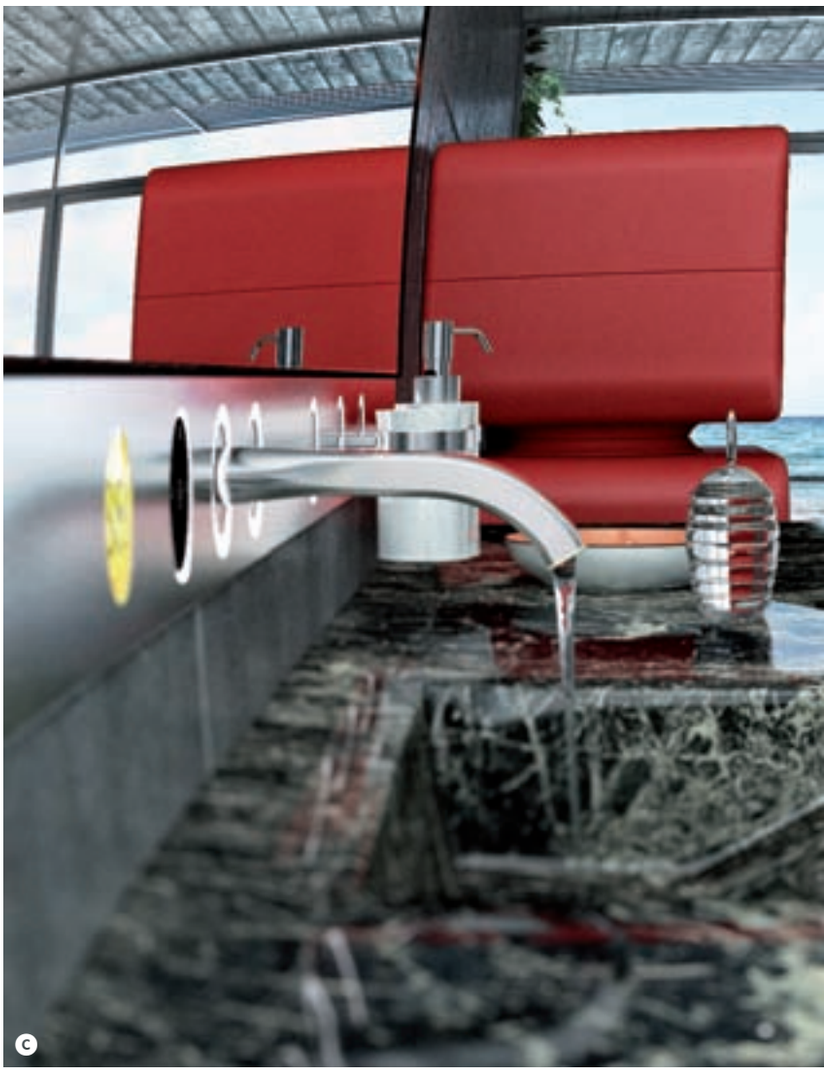
B *Shower Spa*
"Refreshing the mind and body in a concrete setting (Mediterranean client)"



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D

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visible face to the client; the art director is responsible for lighting as well as the realisation of the scene in each project; there's the animation and modelling manager; and finally, the postproduction manager is responsible for giving the final touch to each image.

3D Artist: *What are the main services that Kuan Studio offers and the areas of CGI that you cover?*
Luis Linares: Currently, we focus on architectural visualisation and products in 3D, but our next step is audiovisual postproduction and videogames.

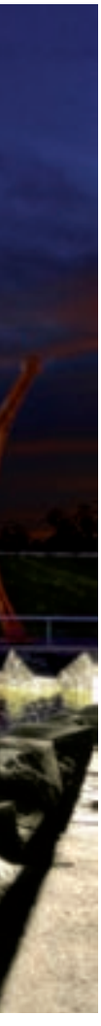
3DA: *Who are some of your main clients?*
LL: We are currently designing a catalogue of bathroom artifacts for a recognised European brand. We have had clients in Panama for important real estate projects, such as luxury residential buildings and large commercial spaces. We are now entering into the Swiss and German markets; however, any clients require confidentiality, so we're only able to name a few here.

3DA: *Do you tend to work more in industry visualisation, commercial or residential, or is it an across-the-board approach?*
LL: We work on every scale across the industry and we take each project as a new and unique challenge.

3DA: *What is the most interesting or rewarding residential project you've worked on?*
LL: *The House in Switzerland,* because in this particular image we wanted to transmit a warm and comforting mood in the house we were in charge of visualising.

3DA: *What software tools do you regularly employ and why?*
LL: As a first phase, we primarily use AutoCAD to model different parts. Next, we use 3ds Max for complex modelling. As an engine for rendering, lighting and texturing, we use V-Ray. For postproduction we use Photoshop and After Effects.

3DA: *How many people typically work on a project, either in-house or externally?*



C *Close-up Spa*
"Close-up of the good life... enjoying the peaceful nature of the sea (Mediterranean client)"

D *Mediateque*
"Montevideo's cultural reflections at dusk"

E *Loft*
"Mixing materials for a unique modern style of living in a house in Punta del Este, Uruguay"

> "We work on every scale across the industry and we take each project as a new and unique challenge"

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Key Project

The House in Switzerland

The House in Switzerland is a project that we loved and enjoyed throughout the production process. From the exchange of ideas with our client came the goal of creating a warm mood using the wood as a motivator of the scene.

There are specific design elements that were modelled exclusively for the scene, which help to enhance the atmosphere in this image. We wanted to convey the cold contemplated from a warm place using multiple items such as wood that symbolises the warmth and serenity; also fire and the stove that further reinforce a pleasant atmosphere.

Postproduction was the most important stage to generate this space, since colour corrections, contrasts and effects allow us to illustrate the idea of the desired space.

> We had a good impact abroad and good reviews of our work for the time the studio has been open

LL: There are three people who work at Kuan full time, and we all participate in all the stages of creation. If there's a bigger project or we have several projects at once, we hire external contractors.

3DA: *Can you give us some idea of the actual production pipeline for producing an image or set of images for a client?*
LL: We want our customers to feel at ease and comfortable. This working methodology is based on practicality and efficiency to achieve the best results in a timely manner. It starts with the modelling process, where we send previews to the client to make the necessary corrections to get the best result in the final product. Once the previous images are approved, we begin the final rendering of images and/or videos.

3DA: *What kind of work have you been doing in the animation and product visualisation fields?*
LL: In the visualisation of products, we have been commissioned for modelling and rendering a catalogue of bathroom artifacts in Barcelona, Spain. Also, we are in preproduction stage for an independent 3D animation film.

3DA: *The building and visualisation industries have both been affected by the global recession. Has your country and your type of work been affected as well?*
LL: We are a new studio so we have not felt the crisis as others may have, and we had a good impact abroad and good reviews of our work for the time the studio has been open.

3DA: *What are your plans and ambitions for the company in the future?*
LL: Our plans and ambitions are to continue growing on a worldwide scale and enlarge our clients' portfolio, and to grow as an architectural visualisation and postproduction studio.

F *House*
"Cooking and living with style in San Sebastian, Panama"

G *Bridges Building*
"Modern style of living in San Francisco"

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iPhone
Tips, Tricks, Apps & Hacks
The insider's guide to unlocking the potential of the iPhone
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essential hints and tips inside

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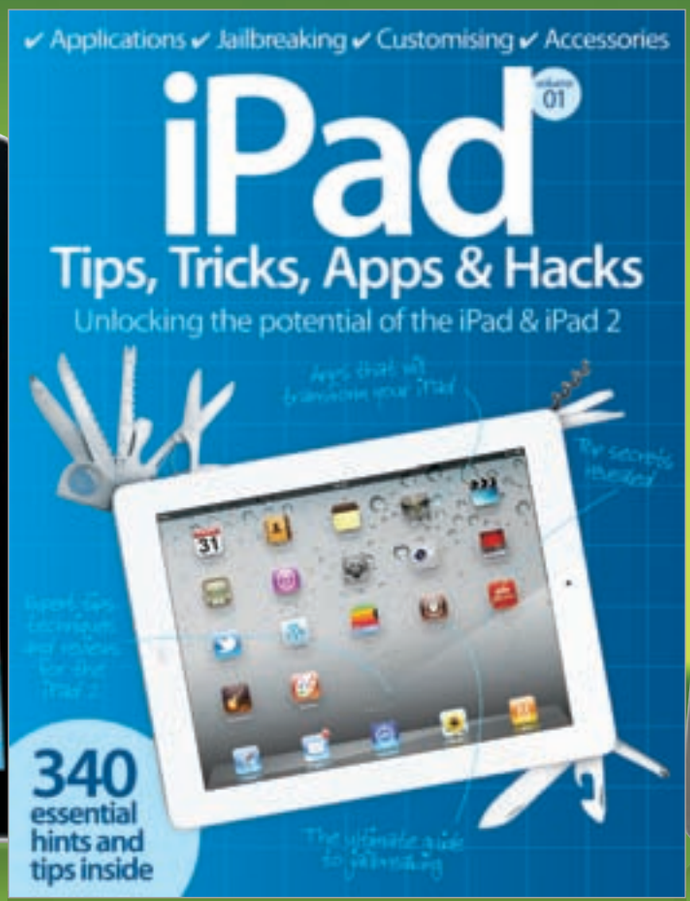

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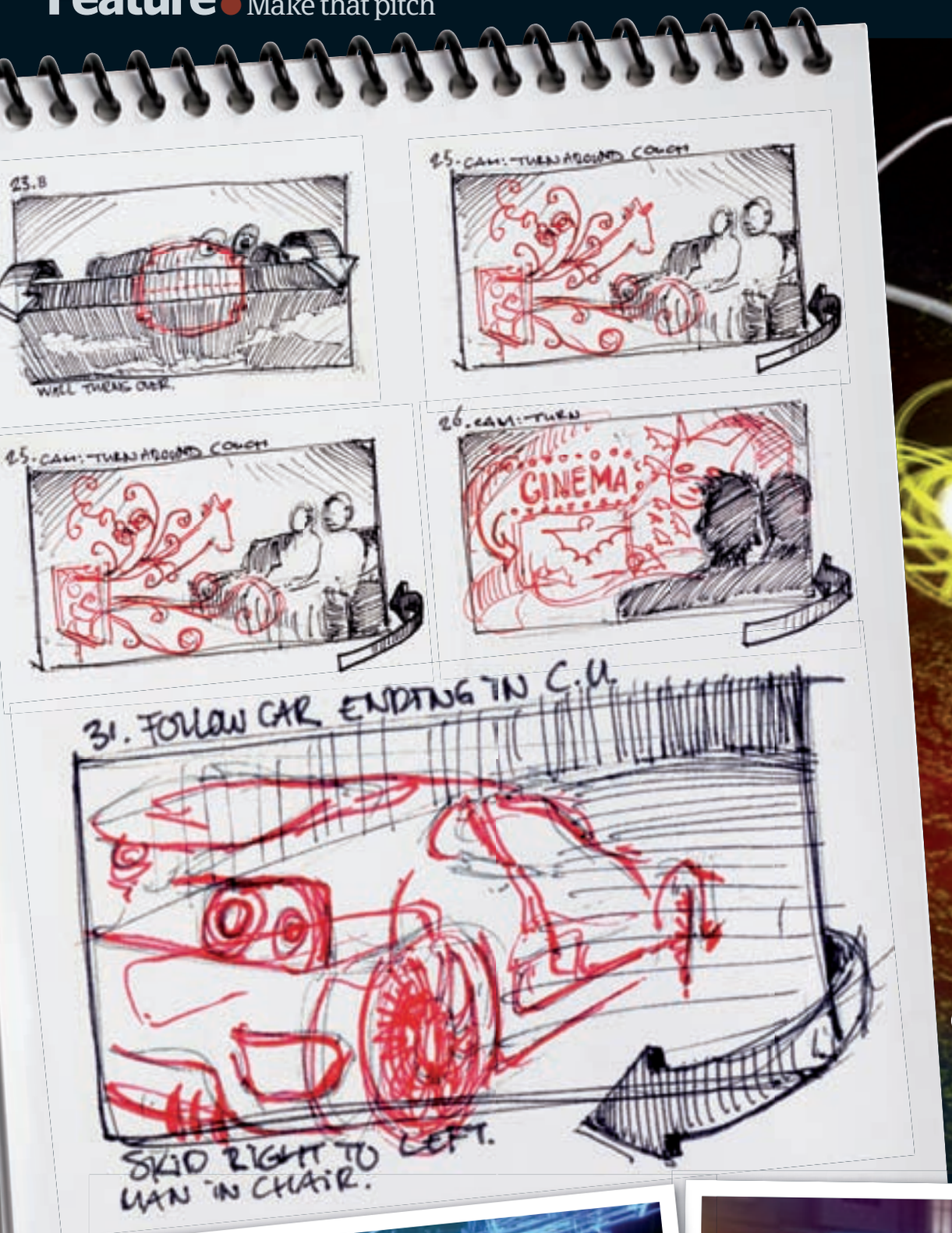

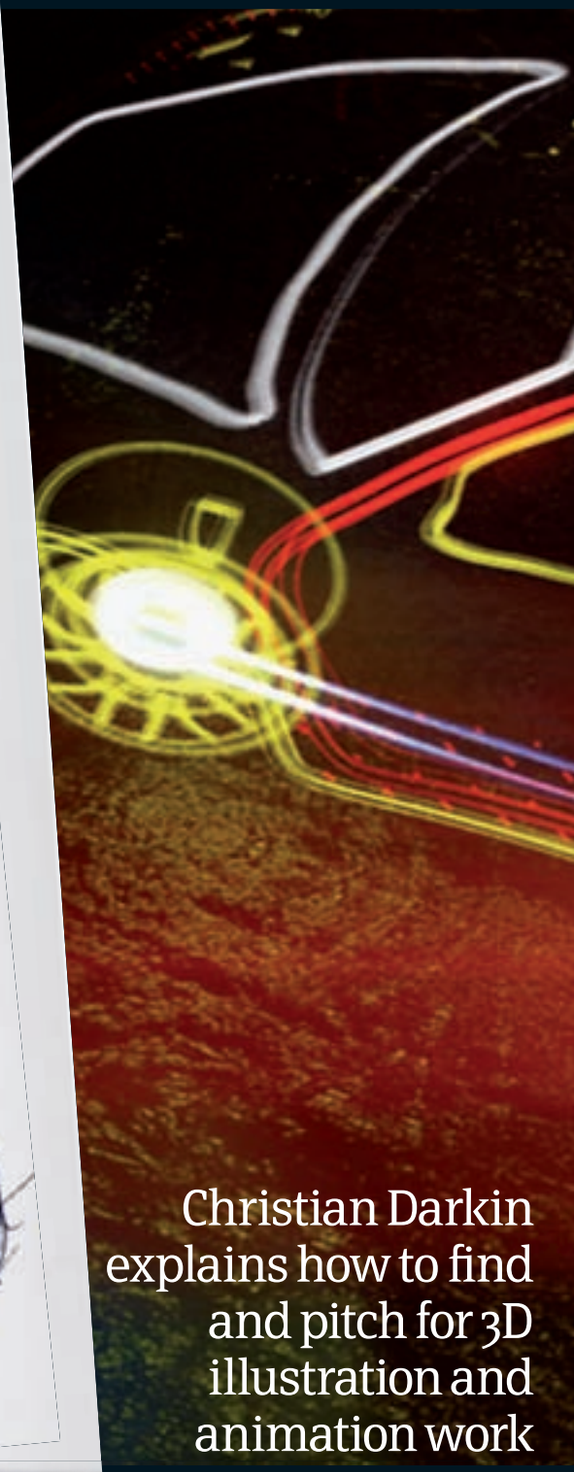

Christian Darkin explains how to find and pitch for 3D illustration and animation work

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» Treatment images from PostPanic's advert for KPN

Make that Pitch

It's one thing being a consummate 3D artist, but it's quite another convincing people to employ you in that capacity as a freelancer. There's more and more work available for the freelance digital artist these days, from music videos to business presentations, and especially with the recession forcing companies to re-examine their budgets, now is the perfect time for individual artists who aren't encumbered by the heady costs involved in running offices and studios to compete for work of a higher profile. And that means you need to learn to pitch.

In essence, pitching is simple. Anyone who wants a piece of 3D work done – whether that's a logo animation, illustrations for a book or effects work for the next series of *Doctor Who* – creates a brief (a description of what's required, an idea of the budget and deadlines and an indication of the look and feel of the project). Artists and studios are then given the brief and invited to pitch their ideas and their take on how they would fulfil it. The client picks the pitch it likes best and commissions the work.

The problem is that pitching itself is a bit of a dark art. What exactly do you put in a pitch? How long do you spend on it, bearing in mind you may never actually get paid? And equally as important, just how do you get invited to pitch for work in the first place?

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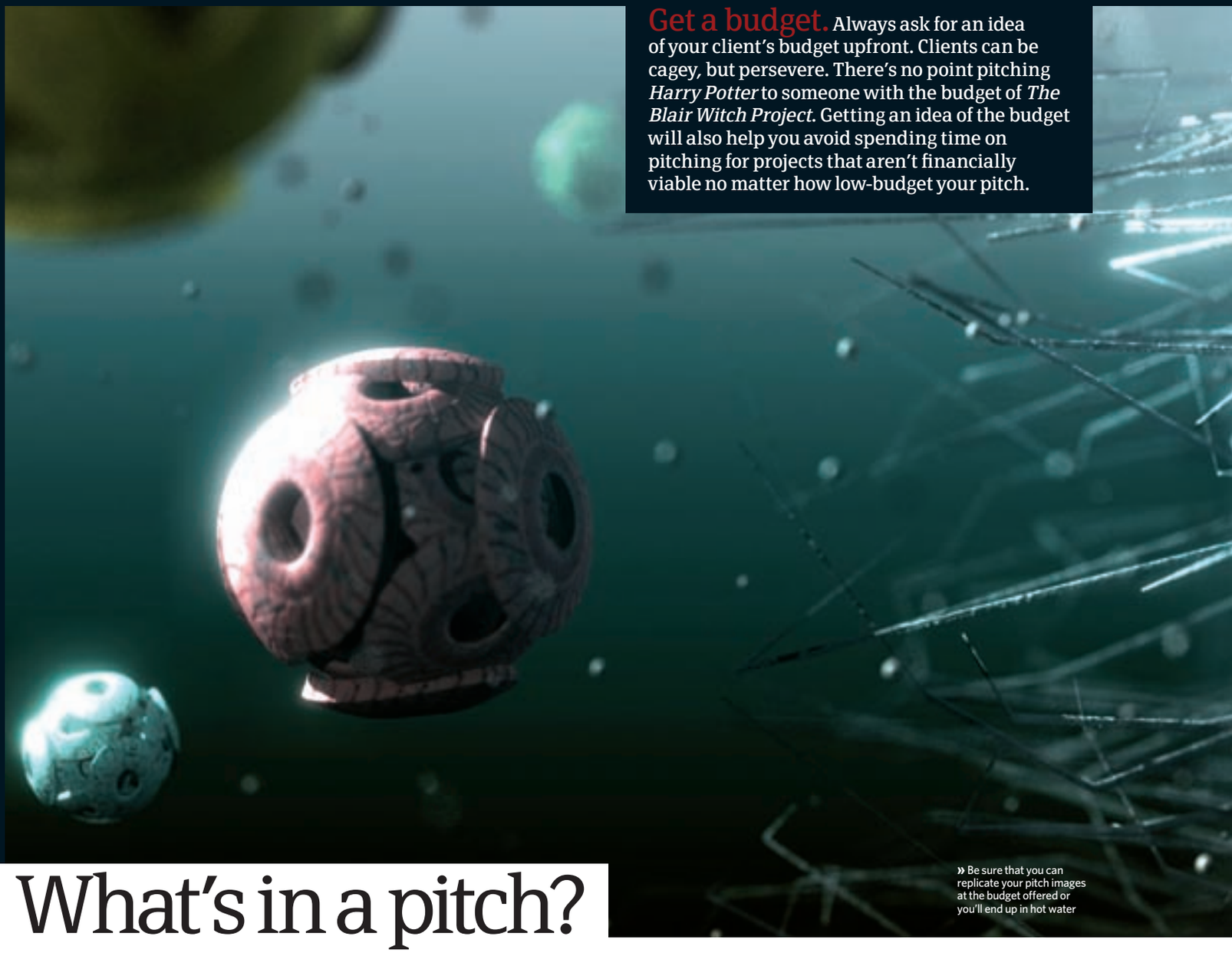

Get a budget. Always ask for an idea of your client's budget upfront. Clients can be cagey, but persevere. There's no point pitching *Harry Potter* to someone with the budget of *The Blair Witch Project*. Getting an idea of the budget will also help you avoid spending time on pitching for projects that aren't financially viable no matter how low-budget your pitch.

» Be sure that you can replicate your pitch images at the budget offered or you'll end up in hot water

What's in a pitch?

How to create the perfect pitch

Pitches generally fall into two types: open pitches and closed pitches. Open pitches are jobs posted in online forums such as **www.elance.com** and **www.radarmusicvideos.com**. Projects posted here are available for anyone to pitch on (provided they're members) and are good places for new artists to sharpen their pitching techniques. The clients posting here are more likely to be inexperienced in working with artists, and because anyone can pitch, anyone does, and you're likely to find yourself up against artists from all over the world with all ranges of ability.

» Image from the pitch for a weight-loss commercial

Particularly on Elance, this tends to drive prices down to unrealistic levels. Often very low quotes will be made by artists who don't have the ability to complete the work, so you have to demonstrate clearly in your pitch that your pricing is justified and your skills are real.

Closed pitches are where a client selects a group of usually between three and six companies and invites them to pitch on a job. This is the way larger projects are generally allocated, and the budgets as well as the expectations tend to be higher.

Of course, the game here is to get on the list of chosen companies in the first place, and that means lots of legwork. Big companies (the BBC and ITV included) have lists of favoured companies from whom pitch lists are drawn up, and this makes the system almost a closed shop.

Other companies have less formal pitch lists, and if you get your showreel to the right person at the right time then you could be in with a shot. Darren Wall at Chase London (**www.chase-london.com**) says: "It's a long process to find the names that matter and often it's a case of who you know."

PostPanic (**www.postpanic.com**) also has agents scouting for work in foreign territories, and once were farmers (**www.oncewerefarmers.com**) has teamed up with a production company who puts its name forward for work and takes a percentage in return.

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Once you get hold of a brief and have the chance to pitch, you'll need to decide exactly what you want to go into your proposal. Some pitches involve just a phone conversation or a couple of paragraphs of text. More commonly, you'll need to produce some sample images, a storyboard or even animated tests to sell your vision.

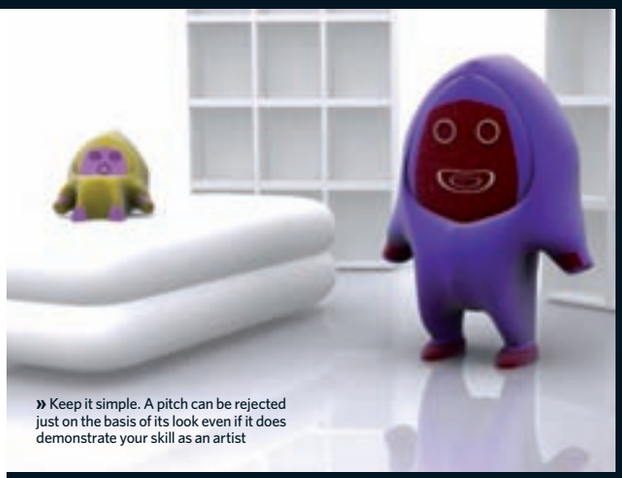
"Don't overpitch," advises Andy Bishop of Darkside Animation. "You can easily end up spending a lot of time and effort on a project just because you're excited about it." The best advice is not to get too carried away before you get the job, as Bishop continues: "Spend a day or two days at most if it's a really big project or something you really want to get."

Time spent pitching is a cost in itself and you have to take it seriously. "If you spend six months of the year on pitching and administration, you effectively need to double your rate for the six months you spend on actual work!" says Will Adams at once were farmers. "If we don't know the budget, we'll often provide two or three options: a high-end version, a low-budget option and something in the middle (of course, 'can we have the high-end version for the middle budget?' is the usual response)." This method often works well with inexperienced clients who find it hard to gauge costs.

"We put a lot of work into pitches. As a rule we aim to provide a written treatment and three or four key full-colour frames," says Ania Markham at PostPanic. "On most pitches we will also provide a shot-by-shot storyboard as well as a piece of motion work. Sometimes it's even complete motion graphic sequences. So in many cases, the visual direction of the finished spot is already defined and presented at the pitch stage."

> "Spend a day or two days at most if it's a really big project or something you really want to get"
>
> **Andy Bishop** – Darkside Animation

» A concept image for another Blue Locust production. The finished product was entirely CGI



» Keep it simple. A pitch can be rejected just on the basis of its look even if it does demonstrate your skill as an artist

Don't be too detailed. Clients – even those in the higher levels of TV – aren't necessarily experts in visualising graphics. They can't always see beyond what's presented to interpret either your meaning or your ability to adapt. An otherwise stunning pitch might be rejected because the colours are wrong or because your lead character is too tall. You can't completely guard against this, but you're especially vulnerable to it if you present highly finished images in your pitch.

Case study 1
Mattressman – Blue Locust

For this project, Blue Locust was pitching against two other companies. The client Mattressman already had a character developed for a radio advert and wanted to take the same concept but launch a TV campaign from it.

"We actually produced some simple storyboards for this advert because the concept was pretty simple – Mattress-man is in bed, his laptop flashes like the Batphone (meaning someone wants a delivery quickly) so he turns into Super Mattress-man and flies off to deliver the mattress. In text form, that sounds pretty basic and not actually that much fun. So we produced these simple storyboards, which showed in detail how the advert would flow."

In this case, the pitch was delivered in a face-to-face meeting, and the company liked the idea so much that the final version was almost identical to the pitch. "The advert did well and led onto other jobs – one for Norfolk County Council, which we are literally just starting."

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Pitching in practice

Our experience pitching for real projects

Not wanting to send our readers anywhere we wouldn't go ourselves, we decided to pitch for a couple of jobs ourselves. Armed with a showreel of our previous work (which you can see at **www.anachronistic.co.uk/content/animation-and-visual-effects-showreel.htm**), we chose two projects with modest budgets – the kind of thing professional artists but first-time pitchers could realistically approach.

Our first project was found on Radar, a site on which musicians and record labels post details of upcoming music video jobs and directors (most of them specialising in live-action film work but with a few animators thrown in) can pitch ideas.

Our chosen project was a pretty tight brief from US rap artist Yo Majesty. The budget was set at $1,700 (not high for a music video but not an impossible budget), and the client had a pretty firm storyline.

Our pitch then had to use the storyline but elaborate on it and come up with a look for the video. We didn't feel it was appropriate to come up with a full storyboard but instead set out our ideas for developing the story in a few succinct paragraphs. This gave us more time to develop the central character (a superhero) and produce a couple of shots showing the style we opted for.

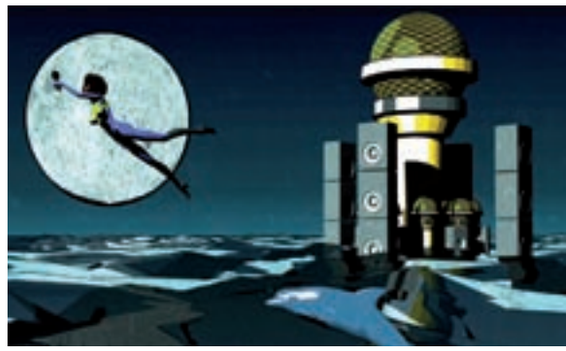
We used QUIDAM to quickly create the character and 3ds Max for the 3D cartoon rendering, aiming for a retro cartoon look with a slightly overcolourful edge – nothing subdued and subtle here. For a bit of fun, we built the character's secret base from microphones and speaker stacks...

So how did our pitch stack up against the competition?

"The client was very impressed with the quality, however, for this particular clip it wasn't what they were looking for in a stylistic sense," said Tom Allen at Genr8 Digital Media. "We really wanted to pick the right piece of artwork that would represent the emotion and pace of the track/storyline and connect best with the artist's fan base. We also took into account the current music video scene and what would stand out best against current video trends that are in circulation.

"This narrowed it down to two submissions. One was an animator that had two very talented illustrators on board. This was supported by a showreel that displayed a large portfolio of productions.

» For a bit of fun, we created a secret base for the superhero character made of microphones and speaker stacks



The second animator had shown great ability by actually producing an animated pitch. This really helped its submission in the sense that we could see character placement and pace of editing – both of which were on par with what we were looking to achieve. The portfolio, however, did not show any examples of the level of production that we were hoping to hit with this music video.

"In the end, the combination of a showreel that showed actual produced examples of a quality we were looking to achieve, illustrators of exceptional quality and the added bonus of being located in the same city as us ended up winning the contract."

However, getting the job isn't the only point of pitching. If someone likes your work, the chances are you'll hear from

» These sketches provided part of the successful pitch for a children's TV series

Case study 2
Fiona is na Fuinn – BBC ALBA

In this project for *Fiona is na Fuinn*, a preschool series commissioned by Scottish Media Group for BBC ALBA, animation company once were farmers had to come up with a range of characters.

The idea was that with a library of motions and angles rendered, the production company could composite the characters into live footage, creating its own stories for each episode in which the characters interacted with a presenter.

The character designs were crucial and, in this case, the pitch consisted mainly of sketches and mock-ups of those characters.

In order to win a pitch like this on the basis of character designs without any animation, you also need to be able to convince the client that you have what it takes to complete the project, and usually that means having to show a substantial showreel of previous relevant animation work. It was a combination of a strong, well-presented idea and a confident track record that won this pitch.

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» The finished commercial used sophisticated imagery and cutting-edge techniques

> We also took into account the current music video scene and what would stand out best against current video trends that are in circulation

Tom Allen – Genr8 Digital Media

them next time they've got a job coming up, as Allen told us: "We will be working with this client on all of its upcoming projects, and it has asked that we keep you in the loop for all upcoming briefs." So from that point of view, our pitch was a success and may yet bear fruit.

For our second pitch, we went to Elance. Here, a medical consultant was looking for a set of six illustrative animations showing the effects of various gastric procedures for a DVD. The price was quoted as between $500 and $1,000, but by looking at the average bids of previous bidders (you can't see individual bids, but Elance does show you an average) we could see that most artists were bidding at the lower end of the scale.

Since the budget was low and there were lots of other animators competing, we decided it was not worthwhile creating mock-up images. Instead, we stressed previous similar work and provided shots from our back catalogue, which indicated that we could do the work.

We also mentioned in the pitch that we would be using a highly accurate bought-in 3D anatomy model (reviewed a couple of months ago in this magazine) to assure the client that we weren't just going to hash something up in ZBrush that looked a bit like some guts.

On this occasion, the client rejected our pitch because he was looking for simpler animation than our examples were able to show, as he said: "This animation is for the general public so using real anatomical models would be confusing."

On another level we lost out on price and time – the winning bidder asked for less money and promised delivery within two weeks. They were also able to show considerable good feedback from previous clients on Elance.

Overall, losing this pitch was probably not a bad thing. With every job you have to decide whether you can afford to take it on. In this case, we felt a bid of below £100 per animation just wouldn't allow us to do a professional job.

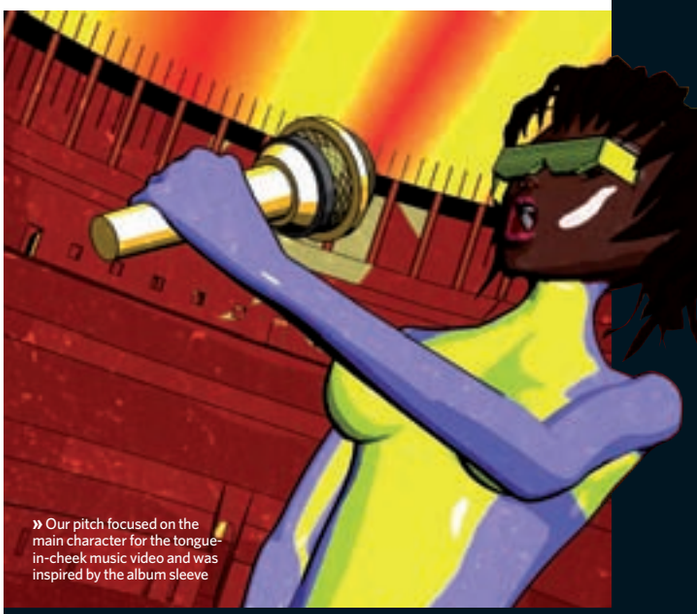
Case study 3
Fibre optics TV advert – KPN

PostPanic's pitch for an advert on glasvezel (fibre optics) for KPN (Holland's equivalent of British Telecom) shows a very complete and formal treatment. With a high-level campaign in the offing, PostPanic created a detailed breakdown, not only of its idea but also of the research it put in to get to the idea.

Going with a concept of streaks of energy arcing to describe the shapes of objects and text, it had to overcome several technical problems before even getting the job. It studied other adverts using similar techniques, and outlined the problems those projects had and suggested solutions to them in the pitch document.

PostPanic's pitch document included a complete shot-by-shot storyboard for the advert. It also produced a range of style frames showing how the effect would look in practice, which is essential when dealing with cutting-edge techniques and unusual styles.

The advantage of this kind of formal presentation is that if there are several layers to the decision-making process and you can't be there at every one of them, everybody involved always has access to a complete explanation of exactly what you're proposing. The downside is that clearly a lot of work has to go in without any promise of work, so this kind of highly structured pitch is probably only justified on a big lucrative contract.



» Our pitch focused on the main character for the tongue-in-cheek music video and was inspired by the album sleeve

Pick up the phone and call. On anything but the smallest project, it's well worth talking to the people commissioning in person. You'll always find out something extra about the project or the way it's organised. Plus, it never hurts to get a feel for the person you're dealing with. That said, have a sensible set of queries that aren't answered in the brief or you're just wasting people's time.

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iTUNES SEARCH: RETRO GAMER

iTUNESSEARCH:DIGITALARTISTMAGAZINE

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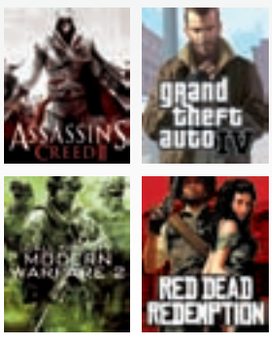

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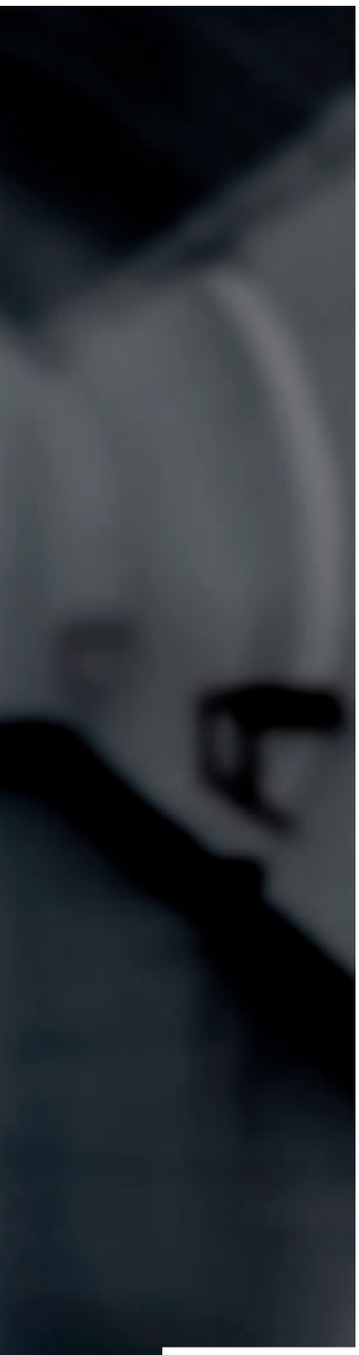

Duncan Evans talks to Dean Agar, an artist busy mixing CINEMA 4D renders with traditional photography

CGI and the photographer

Company Dean Agar Photography
Founded 2006
Company website www.deanagar.com.au
Country Australia
Expertise Photography, CGI
Software used MAXON CINEMA 4D R11 with Advanced Render

> "A shoot day will involve a client arriving, having make-up done, etc, then we will shoot in the studio for a few hours. A retouching day is just what it sounds like. The 3D experimental days fall in-between these days"
>
> **Dean Agar** is an multidisciplinary artist, specialising in photography and CGI

Although residing in sunny Brisbane, Australia, photographer Dean Agar was actually born in the picturesque Ancient Roman town of York, England. In 2003 he moved his graphic design and web development business to Australia, and in 2006 started experimenting with artistic photography. To his surprise, people saw the work and he started getting enquiries. This year he made the decision to go 100 per cent photography with a healthy dose of computer CGI and retouching.

3D Artist: *What does your job normally involve on a day-to-day basis?*
Dean Agar: Photography falls into two activities for me these days: shooting and retouching. A shoot day will involve a client arriving, having make-up done, etc, then we will shoot around our house and in the studio for a few hours. A retouching day is just what it sounds like. The 3D experimental days fall in-between these days, but a lot of it is done at 3am due to a creative idea or an urge to try something new.

3DA: *We understand you've now branched out into creating fantasy images and using 3D software to do it. What was the reason for this?*
DA: The idea of fantasy came from my love of movies and the fantastical images that we see so much on movie posters and promotion, as well as the imagery in the movies themselves. Just after I started playing with CINEMA 4D, a client approached me for a mermaid shot. That became a test-bed for the mermaid series, which I used to learn the software.

3DA: *What software do you use and why?*
DA: CINEMA 4D with Advanced Render on the Mac. I started looking at images I liked around the web and looking into the software they were produced in. It's hard to look past Maya, 3ds Max and LightWave, but there was either no Mac version, a remortgage-level price tag or a learning curve that seemed like Everest on a bad day.

3DA: *On your mermaid series, were there any problems with matching the fishy geometry to your model's body?*
DA: Not really. I took the photo after I had the main geometry done, so I placed the model photo with an alpha channel on a plane in the 3D space and lined it all up in a few minutes. I did a test render with the photo on a visible plane, and once I was happy with the position I did the final render with the photo plane turned off.

3DA: *What other types of images have you been using 3D in?*

Ⓑ

Ⓐ "This was an experiment using a 3D model skeleton. with a metallic breastplate, as I couldn't decide what would be under the chest area of the cyborg. The background was a stock shot that I coloured and gave a depth-of-field blur"

Ⓑ "Originally this was going to be more complex, but the more organic shape of the pelvis and the simple circular ribs worked well and I had not seen a similar approach before"

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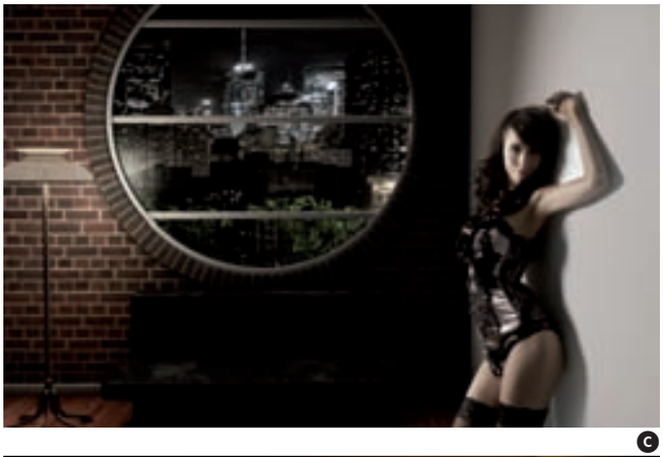

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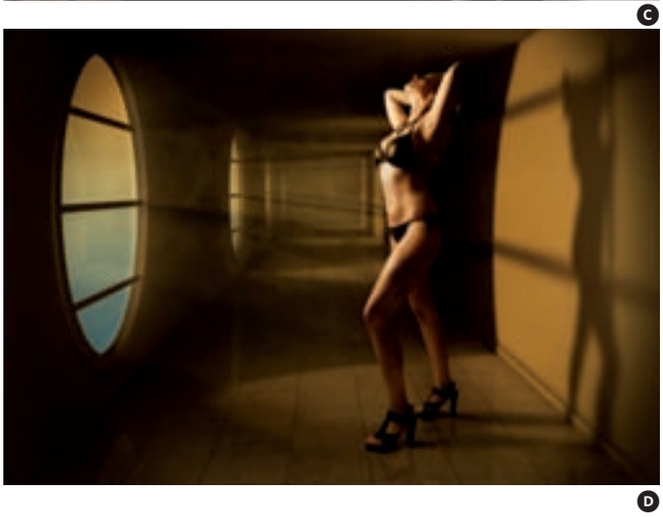

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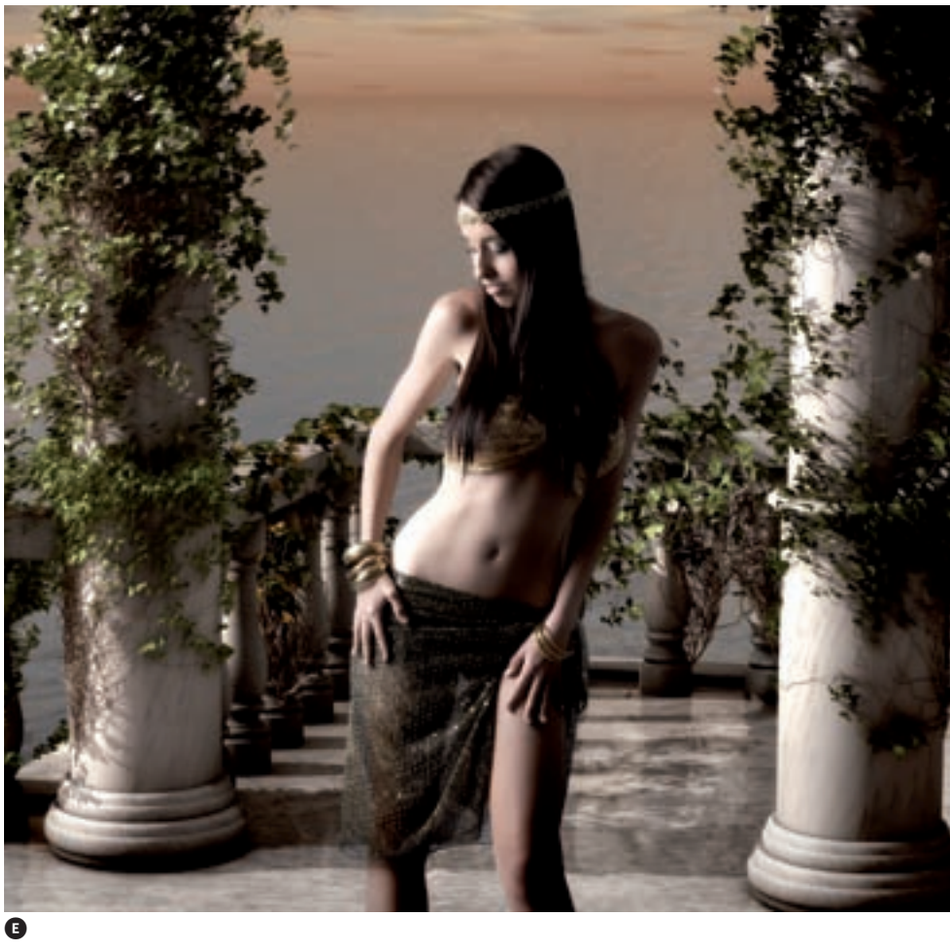

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DA: I'm still really at the beginning of this journey so my 3D portfolio isn't huge. Once I get the confidence then it will start to be used for anything I can't shoot in-camera really. Living in Australia, I don't have access to the type of locations that are very common in the UK or the US, for example. There are almost no stately homes, run-down council estates, rusty old power stations, all that cool stuff. I see 3D as a way to create made-to-order environments once I get the skills to do it realistically every time. Again, it comes down to realism. If it looks fake, you might as well not bother unless you are purposefully going for a stylised look.

3DA: *There's a series of images with the model in a CGI hallway with light coming in from the left. How did you generate the shadows and match the colours from the scene to the model?*
DA: It was mostly using the shadows from the image on a plane in 3D space. It's pretty effective. I had to use Photoshop to line up the shadows near the feet but that was it. The colouring was done in Photoshop using Soft Light layers and colour correction. I tend to make the photo match the 3D image rather than the other way round. I colour-pick the 3D image and try to guess how coloured light would bounce off the walls onto the subject if they were actually in there being photographed. It's a hit-and-miss process and you just need to get it close enough so that it looks okay.

3DA: *For some fashion shots, the CGI element is more subtle. The model is stood against a CGI backdrop that frames a window, out of which is a photo. It looks simple to put together, but was it?*
DA: The tough thing is getting it to look real, but that is the goal in this shot. The render can look real by itself and, of course, the photo of the girl is real, but the first time you put them together in Photoshop it's quite a shock, as they just don't look right together, even though you have used the same lighting in the 3D world as in the photo studio. The eye is a very clever thing and it can see when something is not right. Working out why it thinks something isn't right is a challenge.

The next hour or two in Photoshop is spent adjusting colours, shadows and reflections until you look at it and don't see the joins. It's so subtle and when you're done you wonder why it took so long.

3DA: *Is there potential with this type of scene construction to use it in regular fashion photography, where the intention is not to make the CGI fantastical but to provide alternative backgrounds?*
DA: Absolutely. The apartment shot is a good example of that. I was trying to create a real environment that looked like we were on location in a cool loft room. I can't get access to that kind of location in Brisbane so faking it in 3D is the next best thing, as long as no one can see it's not real. Then the illusion is gone and it becomes an illustration.

3DA: *But isn't this just the CGI version of the Victorians putting people against painted backgrounds?*
DA: In many ways CGI is nothing new at all, just a very sophisticated version of old ideas. Matte paintings, forced perspective and painted-cloth backdrops have all been used since photography was invented. Just compare *Terminator Salvation* with *Jason and the Argonauts*. There is no difference in the concept, simply the level of sophistication. With CINEMA 4D I'm able to achieve the same ideas with a higher level of finish and realism than was available ten years ago using a desktop machine.

It does make me wonder how we will be seen by future generations that rediscover our imagery if society largely dies out. How will they be able to trust what they see as a record of our times? Will they even know not to trust it? They might think *Star Wars* is a depiction of real events and that a guy called Benjamin Button really did age backwards. We live in interesting times.

3DA: *There are plenty of special services from photography studios where people*

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F "I had produced the tail for a sea-based mermaid shot and the bath and room for another shot I never did finish. The bath was modelled in realistic proportions but I used CINEMA 4D's modifiers to make it short and cute. As sad as it seems, I was most happy with the towel"

> "The good thing about retouching now is having so many tools at your disposal"

F

can get dressed up in period costume and be shot against a painted background. Do you think that offering the same service but using CGI backgrounds is a viable idea, either for your studio or in general?

DA: CGI is definitely a time-consuming way of doing these things and I think it will have its place for ideas that simply cannot be done any other way. Like any project, you start with an idea and try to work out what that idea is worth to someone. Then you figure out the best way of doing it. 3D is one way. Conventional retouching and compositing using existing imagery or specially shot background plates is another. The good thing about retouching now is having so many tools at your disposal. If one doesn't work then another might.

3DA: *You've gone a bit more high tech with some female-robot hybrids. This is a popular theme we've seen this year from Franz Steiner and Benedict Campbell. Did you create the robot elements from scratch?*

DA: What 40-year-old boy doesn't love *Terminator* and cyborgs? Things like the Borg Queen and *The Sarah Connor Chronicles* were in my head obviously. The work of Franz and Benedict is stunning, as is the work of Jeffrey Scott for instance. It's not new (*Metropolis* did it in 1927) but it's always fun.

My robots were relatively simple to do. Initially, I wanted a very dense, complex robot with lots of wires and gears (like Jeffrey Scott), but as I built the elements the simpler look seemed to work well so I went with that.

I ended up wanting it to look like a metal version of a real skeleton as opposed to a lot of the imagery out there. The Terminator looks really cool, but as a robot without flesh it really doesn't look like it could run and jump the way it does in the movies. It looks too mechanical, too clunky. I figured the ideal robot skeleton would not look dissimilar to a real one. It's fun thinking about and visualising it. I do want to return to that idea and do a face and much more complex environments, but like anything it's all down to time.

G

3DA: *Any problems compositing them with the fleshy female parts?*

DA: Again, I used an image of the girl, placing it on a plane in the 3D scene so that the CG metal would pick up the photograph in its reflection.

It looked good first time out so the final compositing in Photoshop was very quick, as it just seemed to work. You buy into the image if the reflections look right.

It's actually easier than nonreflective objects, as the reflection does most of the job of linking the CG to the photo. Without a reflection you have to use shadows, light and colour to connect the two elements, and that's a lot harder in my view.

3DA: *Where next with the use of CGI in your photography? What can you see yourself doing with it next year?*

DA: I've been flat out in the last few months, but in Australia things quieten down in January so I'll get chance to revisit CGI and see where I can go.

C "This was my first attempt at a fashion shot using a digital background. I thought that the more elements there were in a shot then the more real it would look, but the reverse seemed to be true"

D "When I do 3D, I will often have an idea and dive in without shooting a specific model shot. Here, I had done a shoot for the Holden V8 team with Stacey Manning, and this shot worked perfectly for this test"

E "I came across a great free plug-in for generating ivy called Ivy Grower, and immediately thought that would give the life that this shot needed. Then I used the CINEMA 4D Sky tool and the water from my mermaid shot"

G "My first mermaid shot was tortuous. The rock was easy but the water was a nightmare. I had to have one plane for the surface and one plane underneath to give the water the blue transparent look"

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Easy-to-follow guides take you from concept to the final render

Artist info

Jian Xu

3DArtistonline
Username: xjgd4321

Personal portfolio site http://xjgd4321.cgsociety.org/gallery/

Country China

Software used 3ds Max, Photoshop, ZBrush, Maya, After Effects, Premiere

Expertise Jian specialises in realistic character work

Software used in this piece

3ds Max · Photoshop

Step by step: How to make real fur

Tiger in the jungle 2008

Modelling, Composition, Texturing

> Creating fur that looks realistic is a tough challenge, but this tutorial shows how it was achieved on this image of a tiger

Jian Xu specialises in character work

This work was the first time I used fur to make a composition of an animal. I chose a tiger because its fur is very colourful; also, when I was a child I often drew tigers in Chinese paintings, so this time I tried to make a 3D tiger. I started using HairFX around about 2003, which was called Shag:Hair originally. After studying it for a few years, I had a lot of experience in the best ways of using it. This plug-in is very useful, easy to control and makes rendering very fast. However, I find it hard to get a high-quality shadow, while another difficulty is not being able to render with mental ray.

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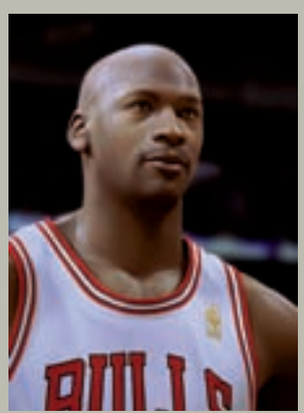
Artist Showcase

Jian Xu

My portfolio almost entirely consists of character work. I think realistic characters are more of a challenge and more interesting.

A Commander **3ds Max, Photoshop (2008)**
I made this European commander for a game called *EndWar*. I wanted to make him a powerful and determined man

Guan Guan **3ds Max, ZBrush, Photoshop (2009)**
This is a girl on a chair with an easy mind. I finished it using 3ds Max, ZBrush and Photoshop, while it was rendered in mental ray



Michael Jordan **3ds Max, Photoshop (2006)**
My purpose here was to show the sweat on the head and portray Jordan's confident expression

+

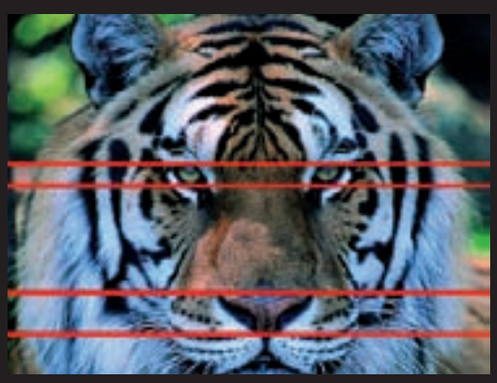
Modelling the tiger

Creating the feline hunter

01 **To begin, I** had to decide which angle would show off the head best. The profile of a tiger is very impressive and shows off its characteristic shape, evoking fierce and powerful emotions. But if I were to choose the face from the front, it would be able to express more detail as well as the skill of catching an animal's expression.

02 **I finally chose** the front view of the face, as I wanted to show the tiger's expression and more details, including the eyes, mouth, the fur on the face, etc. I wanted to suggest the tiger seeking its quarry in the jungle, looking up at the viewer while they pass by.

03 **As the tiger** is in the jungle and seeking its quarry, it should be either standing or walking around instead of running about or lying down. So I opted for the model's final angle to capture the tiger standing and looking at the camera.



04 **The first bit** of practical work that needs to be carried out in this step-by-step walkthrough is gathering photographic references, which is essential when it comes to producing realistic three-dimensional work. I was able to find real-life photographs of tigers on websites, television programmes and even magazines. I took care to observe the body shape of the tiger as well as how the bones line up in order to completely master the structure of the animal.

05 **I began with** its head, which is equally modelling's most important and most difficult part. I focused on the accuracy of the head model, especially its mane. The shape of the mane is different from its fur, as it goes from thin to thick and then becomes thin again at the bottom. So I chose to make the mane with a mesh so that it can be easily controlled.

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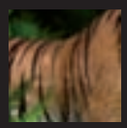
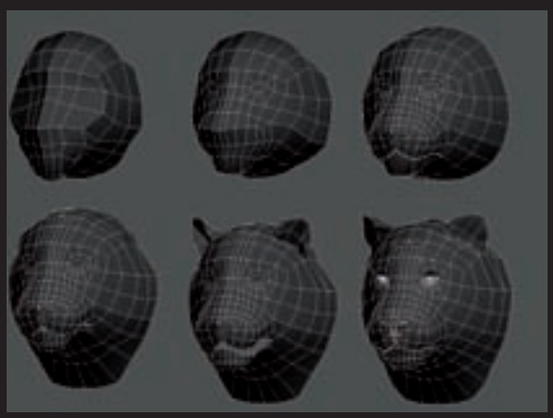
3 hours render time
Resolution: 1024 x 768

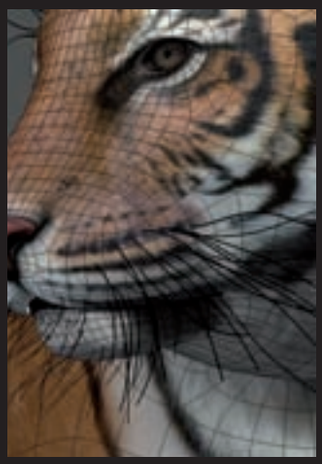


Creating the fur

Getting it to look realistic

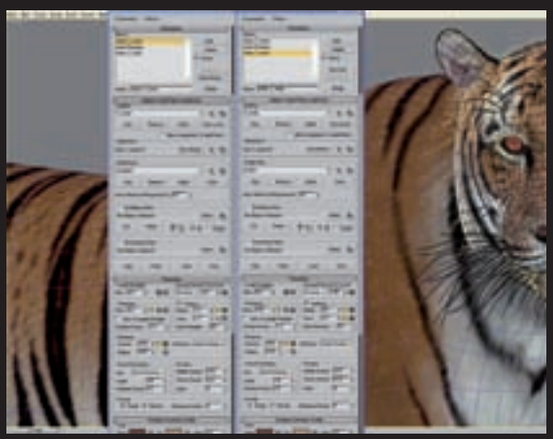


06 **I have about** nine years' experience in modelling, and I've tended to make characters' head models from a box. So here I also made the tiger's head from a box; it's a complex model, so breaking it down step by step should make it easier. I cut some lines on the box to shape the head.

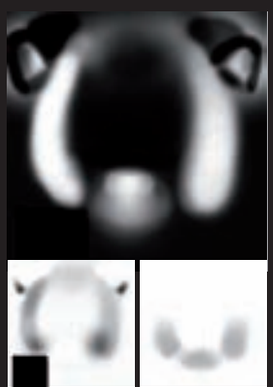


07 **I rendered a** variety of angles and compared them with photographs to check whether the figure was accurate, modifying any inaccurate ones. You need to make sure all the angles are accurate, even though the final one will just be showing the front view of the face.

08 **As long as** the wireframe is clear and simple, it should be easy to make UVs. For the Diffuse colour, I mixed some of my paintings and a real photograph in Photoshop. The photo helps to make the colour more real and accurate; the colour of the fur will also be same as the Diffuse colour.



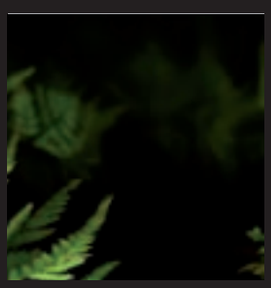
09 **Many people who** have used Shag:Hair know that the direction of the fur is followed by a line. So I did a lot of lines to control the fur. The more lines there are, the more the detail of the fur is well demonstrated.



10 **I also used** some texture to control the thickness, density, length and curliness. That is the advantage of this plug-in. The texture is just black and white.

11 **The next stage** to move on to is creating the mane area of the tiger's head with a mesh. Because this specific mane is fairly dense and the shape is quite particular, a mesh is the proper way to produce it. I spent a lot of time and effort on this part of the composition, as the beard is a standout characteristic of the tiger.

12 **I used three** lights: one for the main light, one for reflections and the last is set to imitate the sky light. For the colour of the light, I used a warm colour to imitate the colour of the sun. The reflection light is a cold colour, set to imitate the effect of forest and shadow.



13 **The speed of** rendering is fast, which is important to reserve time to test. This is one test render lasting ten minutes and without any modifying in Photoshop. The grass in the foreground and background is made with a plane, adding texture and merging in Photoshop.

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behind the scenes

3D artists explain the techniques behind their amazing artwork

Artist info

Jason Pierce

Personal portfolio site http://jasonpierce.animadillo.com/
Country USA
Software used Blender, GIMP
Expertise Jason specialises in character modelling and rigging

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Create a tropical paradise

Treefrog and Dragonfly 2006

Composition, Texturing, Rendering

"An illustration of a tree frog contemplating his next meal, created as a lighting and environment exercise"

Jason Pierce is a videogame artist

In this tutorial I will describe the process used to create my *Treefrog and Dragonfly* image. If you've ever spent any time perusing the art gallery at www.blender.org, you've probably seen this image. In fact, the image is rather old. It was created back at a time before Blender had many of its features that would have been extremely useful for this project, such as the compositor and the subsurface scattering shader. So when I was asked to write this walkthrough, I decided that in order for it to be of any relevance at all, it was time to bring the project up to date and redo some key elements using the modern tools.

This isn't the first time I've unearthed this project to improve it with new tools and improved skills. Twice I've declared this image finished in the past. Now I wonder if it's foolish to declare it done, as each time I add more polish I learn more and push it much further than my original expectations. I think it's a valuable challenge to have a perpetually unfinished project.

This project began as a realistic lighting exercise. Over time, as the project evolved and my own tastes changed, it turned into the more illustrative and magical look seen here. It was modelled and rendered in Blender, with some textures painted in GIMP.

01 Research reference images for the frog

There seems to be no end of useful photos of Red-eyed Tree Frogs on the internet. They have bright colouration and their large red eyes seem to make them a favourite subject for photography. However, I did find that they can vary quite a bit in body shape and colouring. I used this to my advantage, choosing proportions that were pleasing, mixing and matching the most interesting colour patterns A.

02 Study dragonflies

Dragonflies are another popular photography subject, and finding reference photos of them is as simple as a Google image search. With such a plethora of species to choose from, I simply based my dragonfly on one with an interesting yellow-and-black colour scheme B.

03 Environment concept

The concept for the environment was a pond in a tropical jungle. The plants were designed from my imagination, photo references and from life. An important goal I tried to achieve was to give the environment a misty, volumetric atmosphere. This led to several design choices, such as adding the fireflies C.

Concept

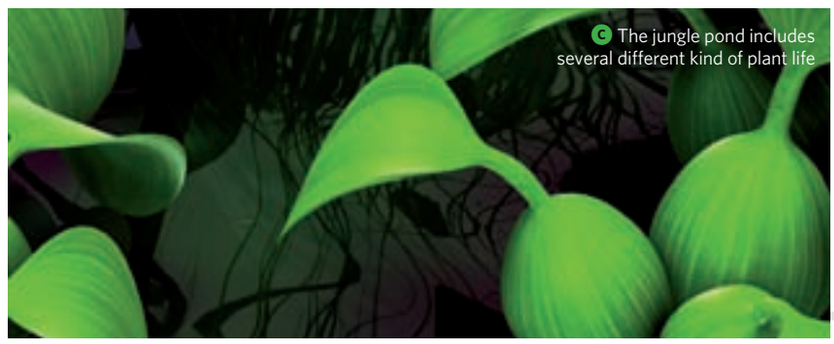
The models of the tree frog and dragonfly were originally created for use in an animation. After the animation was completed, I decided to reuse the characters in a still composition.

Software used in this piece

Blender GIMP

A The model of the frog uses typical Red-eyed Tree Frog colouration, with slightly exaggerated proportions

B The dragonfly design is loosely based on a real species, with some details taken from several different species



C The jungle pond includes several different kind of plant life

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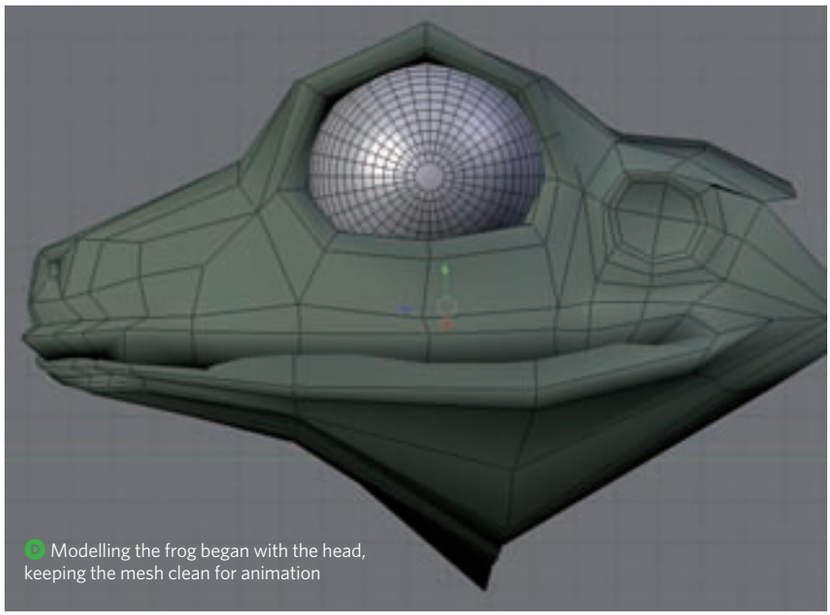
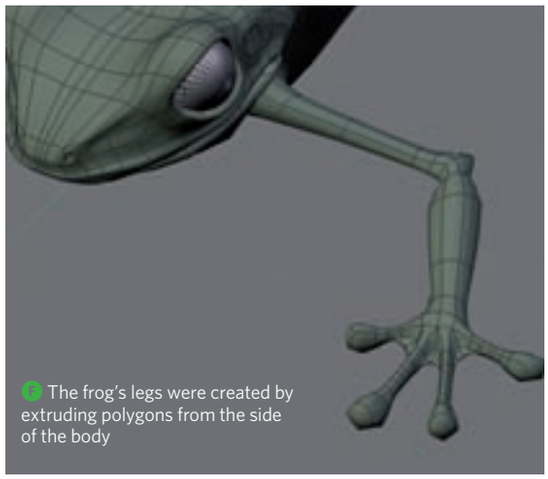
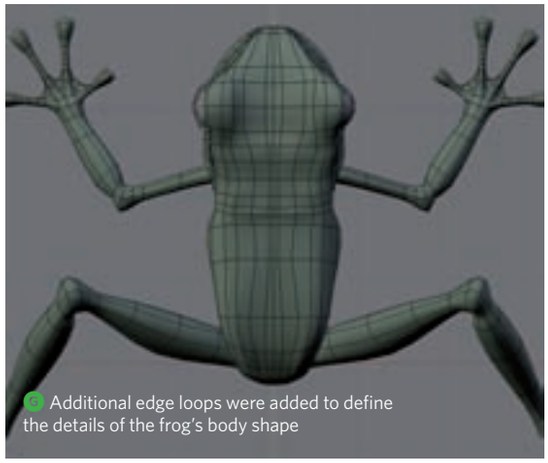


D Modelling the frog began with the head, keeping the mesh clean for animation



F The frog's legs were created by extruding polygons from the side of the body



G Additional edge loops were added to define the details of the frog's body shape

Problems and solutions

My intention was to use the tree frog model for animation. So when modelling the frog, specific attention had to be paid to not only how it looked but also to how it would move. To this end, I focused on two elements in particular: the topology of the face polygons and how and where the limbs would bend.

The frog's face presented two unique challenges. First, the mouth had to open very wide. The corners of the mouth are placed well behind the eyes, back into the neck. To achieve the proper topology, I first box-modelled the head without a mouth, and then used the Knife tool to draw the mouth and surrounding polygons exactly where I wanted them. The other difficult feature on the frog's face was the eyelids. In order to facilitate animation, the eyelids incorporate several edge loops that compress and expand in a circular path around the eye.

To make the rigging process easier, it was important to take care when modelling the frog's limbs and joints. The legs were modelled and bent in the direction they would naturally bend when animated. This keeps the polygons from being deformed too much when the joint is bent to the extremes, and also aids Blender's IK system when it calculates the angles of the limb's bones.

04 Model the tree frog's head

The modelling process began with the head. The box-modelling method was used to block out the general shape of the head. Then the Loop Cut and Knife tools were used to add details. The Subsurf modifier was used to smooth the model, while keeping the polygon count low for rigging and animation D.

05 Add the body

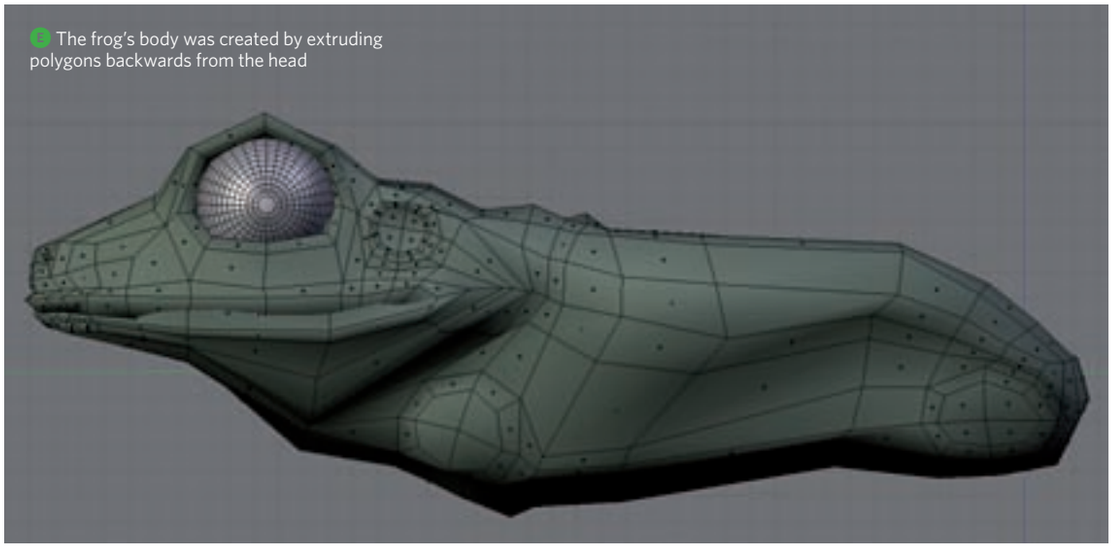
The frog's body was simply extruded backwards from the head. While modelling the body, I referred to several reference photos in order to capture the subtle angularity of the Red-eyed Tree Frog's body. It's a relatively simple shape, so I took some artistic license to add some detail and make it more interesting to look at E.

06 Model the limbs

Once the body was blocked in, I created the limbs by extruding them from the polygons on the side of the body. Because Blender doesn't have good support for polygons with more than four sides, it's important to look ahead and give yourself plenty of vertices to work with. This is especially important for objects like human or animal limbs, which will eventually need fingers added F.

07 Add the details

With the entire frog blocked in, additional edge loops were added to create the details of the frog's shape. Additional topology was also added at the joints to ensure they would bend correctly when animated G.



E The frog's body was created by extruding polygons backwards from the head

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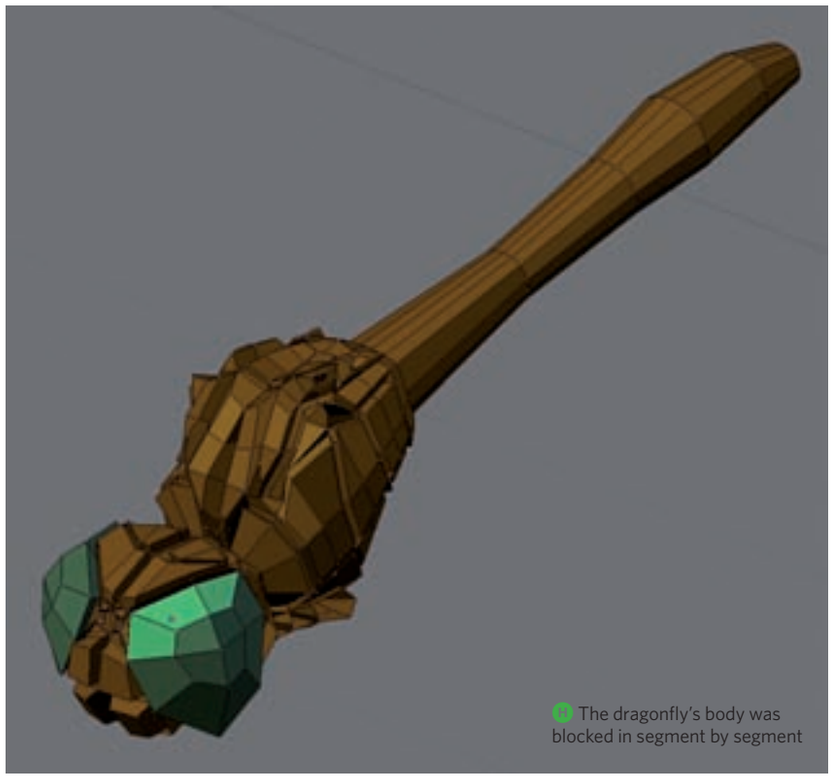
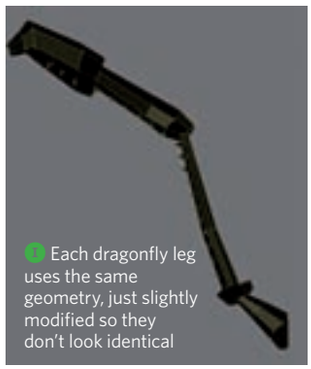


H The dragonfly's body was blocked in segment by segment

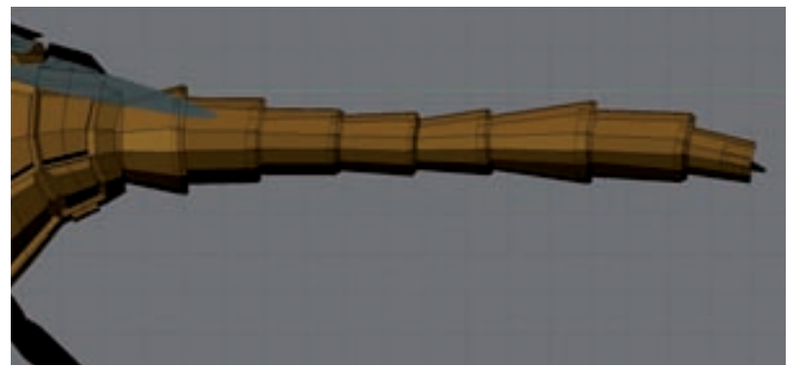
Lighting and rendering

The biggest challenge with this project was lighting and shading. The intention was to create a night scene. This presents the problem of creating the illusion of darkness, while providing enough light to illuminate the subjects. I dealt with this in two ways. First of all, all the lights were coloured with a cool tint. This gives the scene an overall night-time feel. Second of all, I made use of saturation levels to lend a dark feel. In low-light conditions, not only is illumination reduced but there is also a reduction in colour information. Therefore, by desaturating the areas further back in the image, a dark feeling can be created without actually darkening the luminosity of the colours.

Another challenge that comes with complex scenes is that long render times make it difficult to tweak materials and lighting. To give myself a better idea of how the lights worked together without the complexity of the scene slowing down test renders, I created the lighting rig by lighting a simple white sphere. To quickly test materials, Blender has a couple of useful tools. First, border rendering allows you to render a small portion of the image without changing the image or camera settings. Second of all, the Render Preview window allows you to render a portion of the image directly in the 3D view.



I Each dragonfly leg uses the same geometry, just slightly modified so they don't look identical



J The segmentation on the dragonfly's tail is easily added with a few additional edge loops

08 Block in the body

Insects are relatively easy subjects to model. Their segmented bodies provide a straightforward way to break the model down into smaller, simpler objects. Each segment was modelled individually and then joined together. When modelling an insect such as a dragonfly, plan ahead when modelling the thorax (the middle segment) to accommodate the legs and wings H.

09 Add the legs

The dragonfly's legs were modelled separately and then later attached to the body. To save time, I modelled one front leg first and duplicated the geometry twice for the middle and hind legs. Then each leg was tweaked so that they did not look identical. The hairs on the legs are just a simple triangle-shaped mesh I.

10 Detail the body

The detail on the dragonfly's body was created by selecting interesting-looking groups of polygons and extruding out. The segmentation on the tail was made by creating several edge loops, and scaling and moving every third loop to make a series of ridges J.

11 Model the wings

The dragonfly's wings are nothing more than planes made to fit their texture. The detail on the wings is created purely by using Transparency and Bump maps. Small shoulders were extruded from the body to create a natural-looking join between the wings and body K.

K The dragonfly's wings are simply planes that were contoured to match the shape of the wing texture

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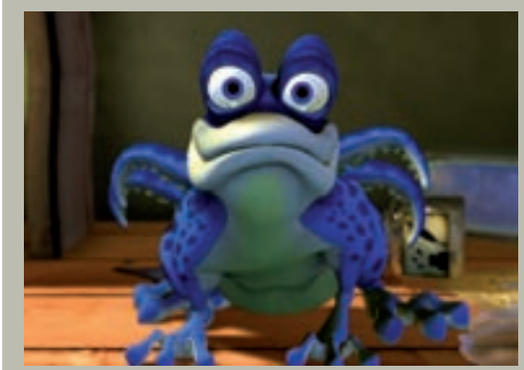
Artist Showcase

Jason Pierce

I've been doing 3D art as a hobby and professionally for the past ten years. I started using Blender in college because it was a free alternative to expensive commercial tools. I'm probably best known in the Blender community for creating Ludwig, a free rigged character for use as an animation learning tool.

Viper **Blender, GIMP (2009)**
This is some high-resolution game art, created for use in the user interface. It's from an iPhone game I'm working on called *NovaRift* that will hopefully have been released by the time this issue is published



Octofrog **Blender, GIMP (2007)**
This is Octofrog, the protagonist from my short film 'Alchemy'. Octofrog is a faithful pet that just can't catch a break. You can watch the short at **http://alchemy.animadillo.com/**

Vampire **Blender, GIMP (2008)**
This is a scene from an animation I was working on. A vampire-like creature examines life in a dead forest. Credit goes to animator Nathan Dunlap for the vampire's pose

L The background trees were generated using a Python script

12 Background trees

I find it difficult to replicate the randomness and variation in nature. This is especially true for repetitive tasks, such as modelling tree branches and placing leaves. A good solution to this problem is to use a script to generate the models for you. To create the background trees, I used an old Python script for Blender called L-system. Today there are several options for tree generation, and if I were to re-create this image I would probably opt to use a newer script called GeN3 L.

13 Water plants and orchids

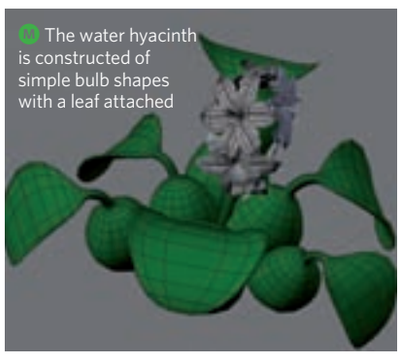
The floating water plants are water hyacinth. They are rather abundant and easy to obtain, so I was fortunate enough to create the model by using a real plant rather than a photo reference. Its construction consists of several large floating bulbs, each with a single leaf attached. I modelled one bulb and duplicated it several times, modifying each slightly to create some variation. The orchids were designed using photo references and imagination. Since they were intended for the far background, it wasn't necessary to include very much detail. The vines that the orchids are attached to were created using the L-system script M.

14 Grasses and mosses

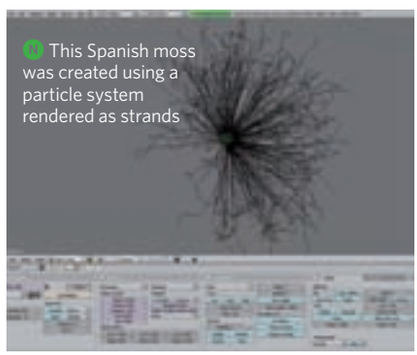
The grass and moss objects in the scene were all created using particle systems rendered as strands. The curvy random paths of the moss was achieved using the Brownian motion feature of the particle system. The shape of the strand is controlled using the object's material, which contains attributes such as the strand's starting and ending width N.

Textures

The majority of the textures in the scene are generated procedurally using Blender's built-in textures. Where procedural textures wouldn't suffice, GIMP was used to paint the UV mapped textures by hand. The only photo texture in the scene is on the background leaves, which is a photo of a leaf from my wife's rubber tree.



M The water hyacinth is constructed of simple bulb shapes with a leaf attached



N This Spanish moss was created using a particle system rendered as strands

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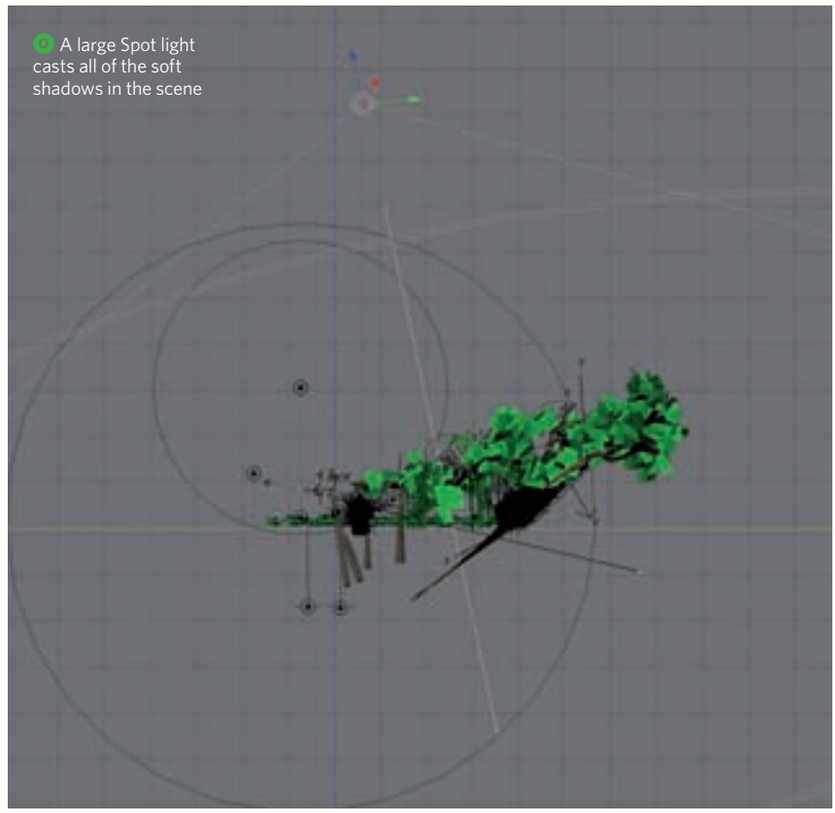
15 Global illumination

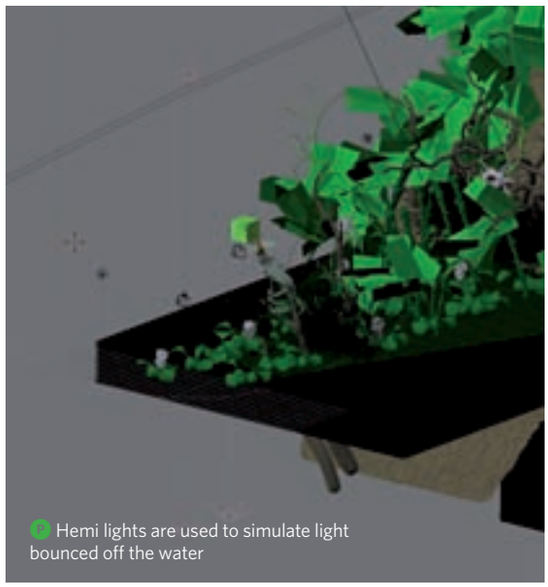
Most of the light in the scene comes from a combination of a large Spot light and Ambient Occlusion. The Spot light was chosen because it supports soft buffered shadows. This compromise was made after trying soft ray-traced shadows from an Area light, which rendered far too slowly. The Ambient Occlusion shading is set to both add and subtract light; it casts the sky colour, which is a gradient from blue at the horizon to pale yellow at the zenith O.



O A large Spot light casts all of the soft shadows in the scene

16 Secondary and bounce lighting

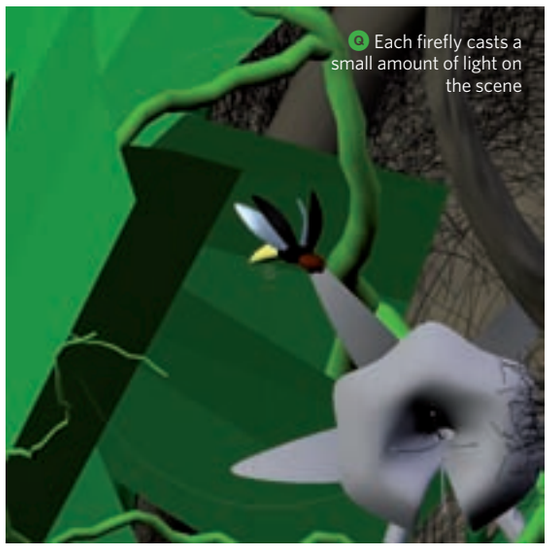
A pale green lamp was added to cast an eerie glow over the scene from the opposite direction as the main shadow casting light. Hemi lights with a procedural texture are used to simulate light bounced off of the water. A soft, dark blue lamp was then added to give a subtle blueish tint to otherwise black shadows P.



P Hemi lights are used to simulate light bounced off the water

17 Firefly lights

To add realism and interest, fireflies were added to the scene. A small lamp is attached to each firefly, which illuminates the area around it. To simulate illuminated fog, each firefly lamp is accompanied by a halo with a cloud texture applied Q.

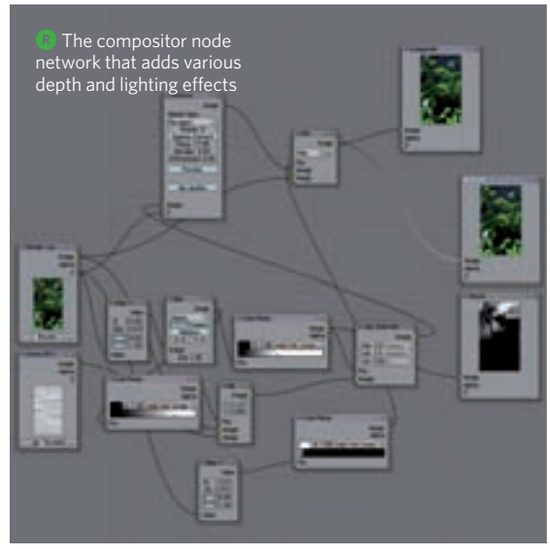


Q Each firefly casts a small amount of light on the scene

> “To add realism and interest, fireflies were added to the scene”

18 Fix it in postprocessing

Much of the lighting effect in the scene was not obtained directly through lamps or Global Illumination, but instead was created during postprocessing using Blender’s built-in node-based compositor. For example, the Z-Buffer was used in conjunction with the Hue/Saturation/Value node to make the scene more blue and slightly less saturated in the background R.



R The compositor node network that adds various depth and lighting effects

Rendering the image

A scene of this complexity, with many reflecting shaders and multiple light sources, can be difficult to render at print resolution. Time and computer memory both become serious issues. To keep both memory and render time under control, I had to do some a bit of fine-tuning to the scene. The first step was to remove anything that wasn’t in the field of view of the camera (resulting in the conical-shaped scene seen in the screenshots). I then obtained better performance from the renderer by fiddling with the Octree resolution and the number of parts the image is broken into.

18 hours render time
Resolution: 2,200 x 3,600

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I made this...

Incredible 3D artists take us behind their artwork

Artist info

Luis Tejeda

3DArtistonline

Username: 3dluis

Personal portfolio site http://luistejeda.tutorial-lab.com/

Country USA, Spain

Software used 3ds Max, V-Ray, Photoshop

"I chose to make a combination between wood and metal with no brick, trying to get a modern look for the house. I added a red tree to add distinction to all the dark green vegetation"

"It took me about three weeks to finalise the image. I used 3ds Max, V-Ray and Photoshop for the final retouching. I used a free plug-in called Ivy Generator to do the growing ivy on the wall"

"For the final composition, I rendered in different passes. The most important ones were occlusion, reflection, refractions, Z-Depth, specular, shadows and, of course, the render ID with which you get more precision to separate different parts of the rendering by selecting a colour"

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Peaceful House
2009

This image was an entry for a contest where postproduction wasn't allowed. I elaborated a lighting scheme that would accentuate different areas in the scene. With some postproduction, I later added several details for more realism.

"For the lighting I used VRaySun and a V-Ray camera. I think for exterior shots like this one you can achieve better results. I used V-Ray displacement for the grass, then in Photoshop I duplicated the layer, made it darker and erased some parts to make grass patches"

"I wanted to make the scene inviting to this beautiful house at a certain time in the day. There's something very serene about a sunset and I wanted to capture this feeling"

Software used in this piece

3ds Max · V-Ray · Photoshop

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Create a futuristic sunset scene

Laguna 2009

“With Jack Vettriano’s The Singing Butler as my inspiration, I took a stab at creating my own dramatic, sunset beach scene”

Jacob Charles Dietz is a digital artist and illustrator

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Step by step

Easy-to-follow guides take you from concept to the final render

Artist info

Jacob Charles Dietz

3DArtistonline
Username JCD

Personal portfolio site
http://jacobcharlesdietz.com/

Country USA

Software used Vue Infinite, Poser Pro, Photoshop

Expertise 2D/3D illustration, matte painting, mostly in sci-fi/future noir themes

In this tutorial I'll be walking through the construction of my image *Laguna*, covering the key steps from concept and setup to render and work in postprocessing. Inspired by the painted beaches of Jack Vettriano and recent sunset walks along the California coast, I set out to re-create some of that magic with *Laguna*. The concept was to capture a young couple standing on the tide flats at that brief moment in time just before the sun says good night and drops into the ocean. I wanted it to look credible and realistic, while still giving the viewer the feeling that the scene could perhaps be a postcard from the future, so I will detail my renders with photographic assets.

Combining 3D renders with photographic elements can take an image from average to fantastic and, if executed well, it can make for some pretty surrealistic results, which is what I am after here. Replicating this very specific time of day will be the job of e-on software's flagship application, Vue 7 Infinite. The couple on the beach will be set up by Poser Pro and then the entire scene will be detailed in Adobe Photoshop CS4 using photographic elements.

Software used in this piece

Vue Infinite | Photoshop | Poser Pro

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Setting the scene

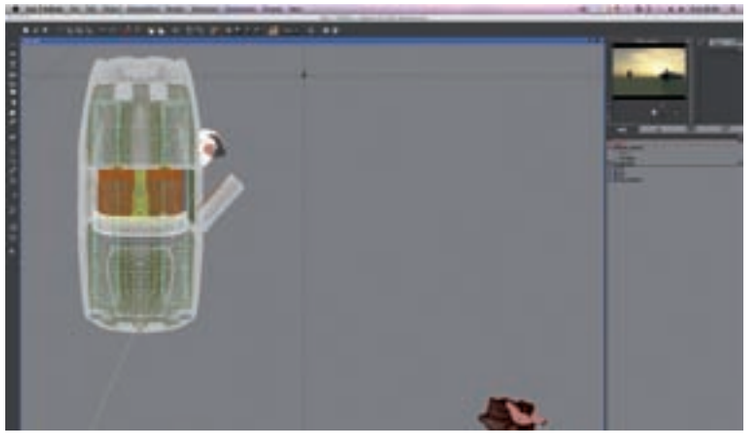
Look for a golden sunset

01 **Like most of** my pieces I started by making a basic sketch, but for this one I also needed a decent stock photo that would be used both as a guide in setting up the 3D scene and to add realistic details to the render with a little Photoshop work.

02 **One thing I** always do first is set up the scene's atmosphere, so with an empty new scene I started playing with the setup. Since I was fusing a 3D scene with a photo, I referenced the stock image I had found to ensure my camera and sun position was correct.

03 **Now I needed** my actors, so it was off to Poser. With such a huge following, it's hard not to find exactly what you are looking for in the way of Poser characters, clothing and accessories. For this I used two popular figures from DAZ 3D: Michael 3 and Victoria 4.

04 **I had sketched** out a retro hovercar for the scene, but after spotting a futuristic Porsche Speedster model in e-on's Cornucopia 3D store, I knew that was the perfect ride for my scene. With the model in Vue, I tweaked the materials a bit and painted it a classic Speedster silver.



05 **Now that I** had the main elements for the scene, it was time to get them all into place. Referencing my composition sketch, I placed the Speedster and moved Michael into position. Using the overhead view, I approximated his line of sight and found where Victoria should be standing.

Artist showcase

Jacob Charles Dietz

I was always drawing as a kid, mostly creating RPG characters and amateur comic books. I played around with 3D art early on by way of Bryce and Poser, but never really got into it until I picked up Vue and made a go of doing professional work.

Kumo Station Poser, modo, Vue, Photoshop (2009)
This started out as a simple test of Vue 7 Infinite's new Atmosphere Engine. The sky and clouds are a straight Vue render with no postproduction work

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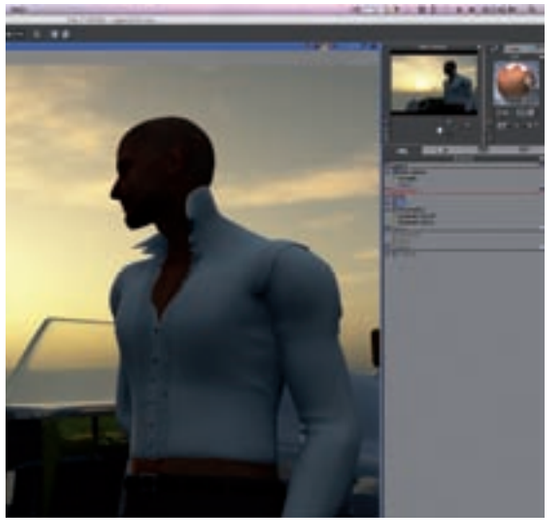
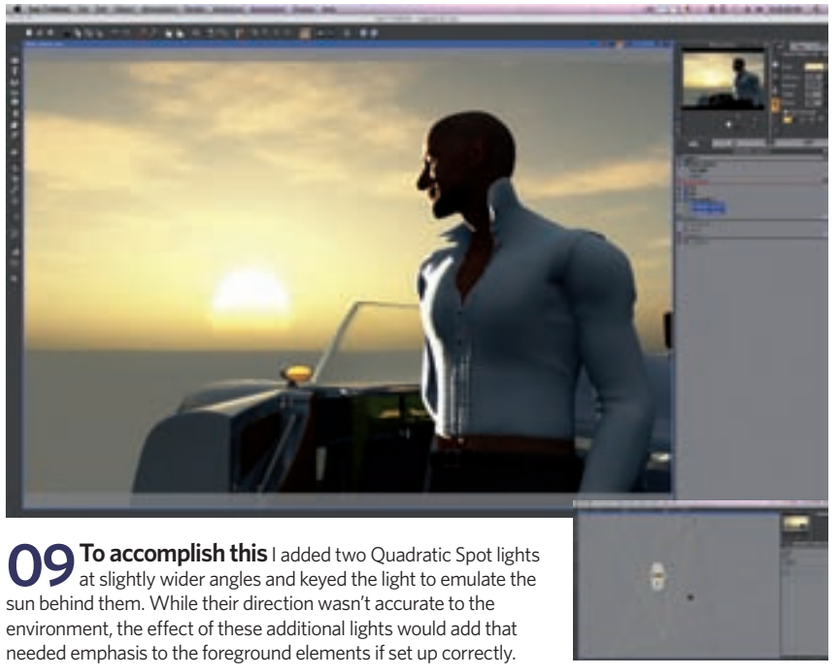
Lighting
Set the scene with light

06 **Next I ran** a preview render, which revealed that Michael's pose wasn't quite right, so I went back to Poser and adjusted his stance a bit. After updating him in Vue, I tweaked his position against the car and ran another preview render to see how I did.

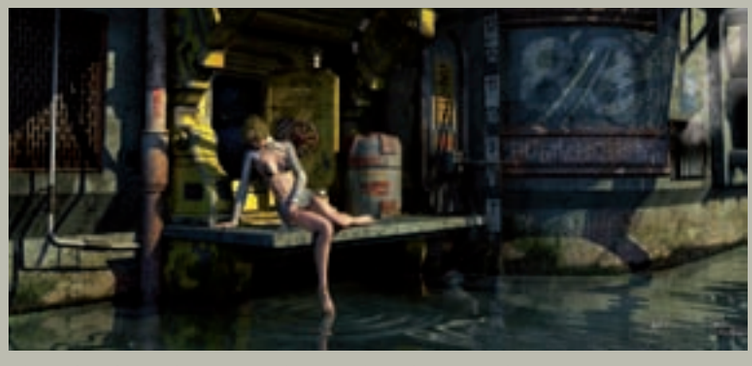
07 **When I felt** that both actors were looking good and had believable body language, I ran the SkinVue Python script to ensure absolute realism in the skin materials. Even though these two would be a way back in the scene, natural skin mattes go a long way, especially with atmospheres using Global Illumination.



08 **Another preview render** showed me where my light was hitting and, while it was a nice sunset, the edges of the figures and the car were pretty dull and boring. They needed a little help from some additional light sources to create some added drama and interest.



09 **To accomplish this** I added two Quadratic Spot lights at slightly wider angles and keyed the light to emulate the sun behind them. While their direction wasn't accurate to the environment, the effect of these additional lights would add that needed emphasis to the foreground elements if set up correctly.



The Swimming Hole Poser, modo, Vue, Photoshop (2008)
The Swimming Hole was a commissioned piece where I was able to run with a basic idea from the client. The result was a rather tranquil scene in an otherwise chaotic, urban future with a lovely young lady contemplating taking a dip in the cool waters of a long-forgotten reservoir

Urban Angel (Suzume No Namida) Poser, modo, Vue, Photoshop (2008)
I created this one for the 2009 Macworld Expo in San Francisco as part of a larger showcase of artwork created exclusively on a Mac. I was really aiming for a cold and lonely feeling, although most people see the subject as being quite content and happy

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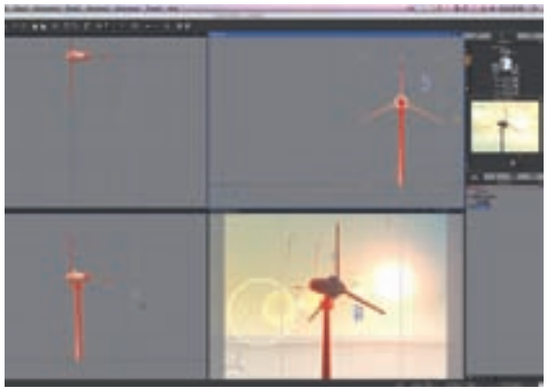
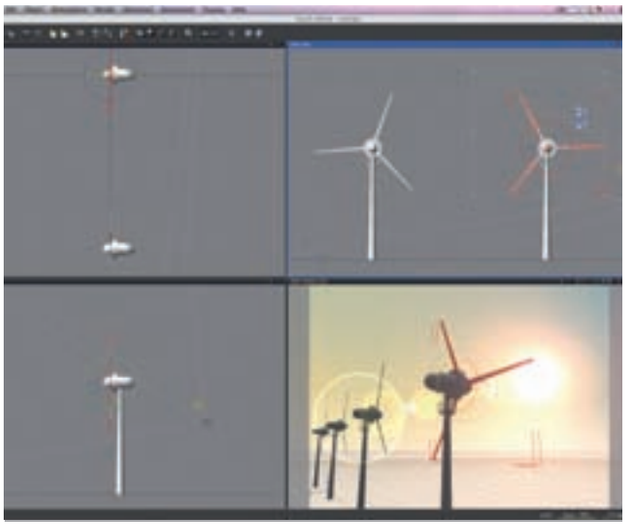
Modelling

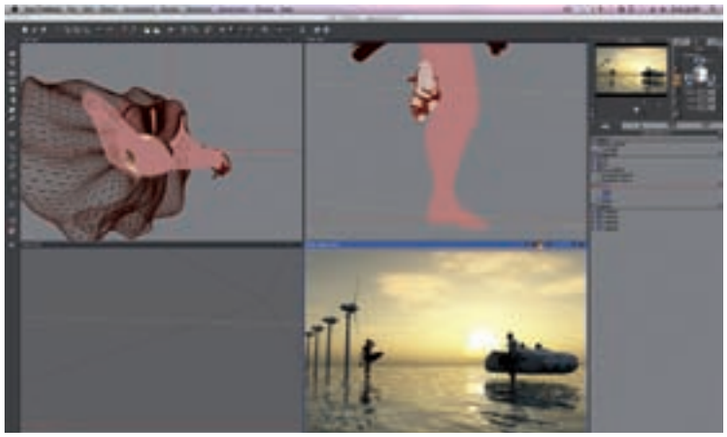
Build a simple turbine prop



10 Happy with my lighting setup, I then needed to build the monstrous turbines for the futuristic wind farm. I looked for some reference photos and then took to building one right in Vue using primitives and simple boolean operations. The finished product was basic but looked the part for my needs.

11 After completing the first turbine, I duplicated it a few times to create the illusion of a larger wind farm. In order to give them some individuality, I rotated the blade assemblies to random positions. While it's only a small touch, I believe that this sort of randomisation can make a huge difference in the end.

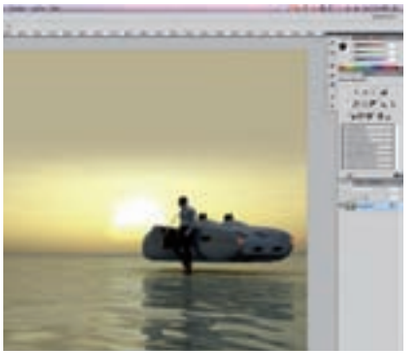




12 Next, I applied a simple sand material to the base plane. On top of that I created a new water plane and applied a polluted dark water material, which over the base plane would help to create the look of the shallow tide flats under the photographic details being added in postproduction.

13 Thinking I had everything in place, I ran another preview render to make sure things were all looking as they should. I was specifically double-checking to see that my render was going to line up with my stock photograph so that my work in postproduction would be a little easier.

14 With things looking as they should, I went about plugging in my final render settings. I typically render using Final Quality at 6,000px wide. While it may seem excessive to render so large, it affords a lot of flexibility in how the finished piece can be used.



15 13 hours later, the base render is completed and opened in Photoshop. While not very exciting on its own, the fun part is just beginning, as there is lots of detail work to be completed in Photoshop. These details are what will take this simple scene from being merely average to being interesting.

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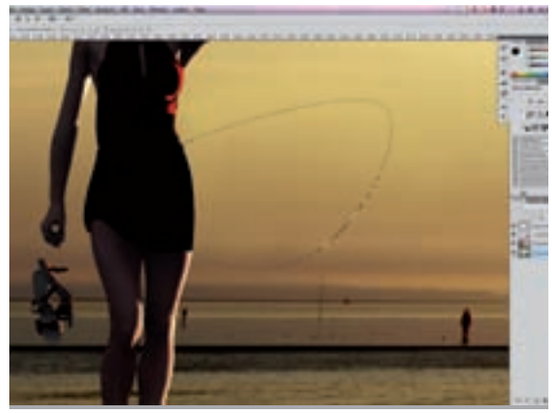
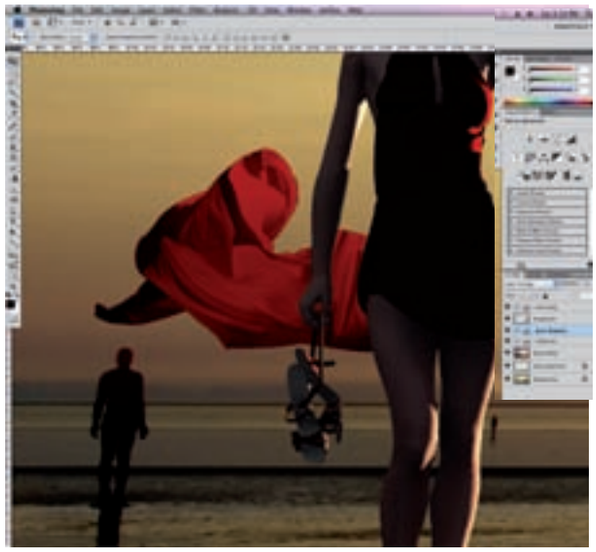
Initial postproduction

The completed render meets Photoshop

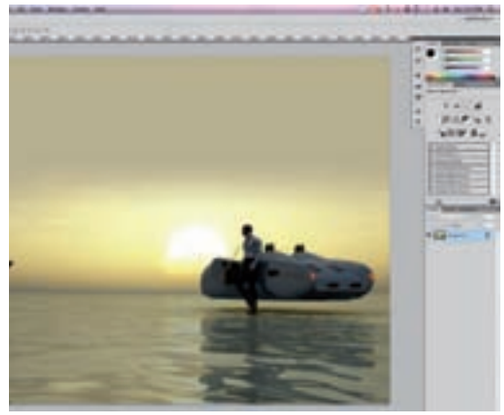
16 **Using the alpha** channel saved with the base render, I started by cutting out the models from the background. This let me place the stock photo behind them. Setting the blending mode to Overlay, the photo quickly took on the tone of the base render and looked very natural.



17 **Right away I** could see that her dress was blowing the wrong way, as the wind should be coming off the ocean, so I had to flip it. Since she was cut away from the background, all I needed was the Pen tool to create an accurate selection and delete.



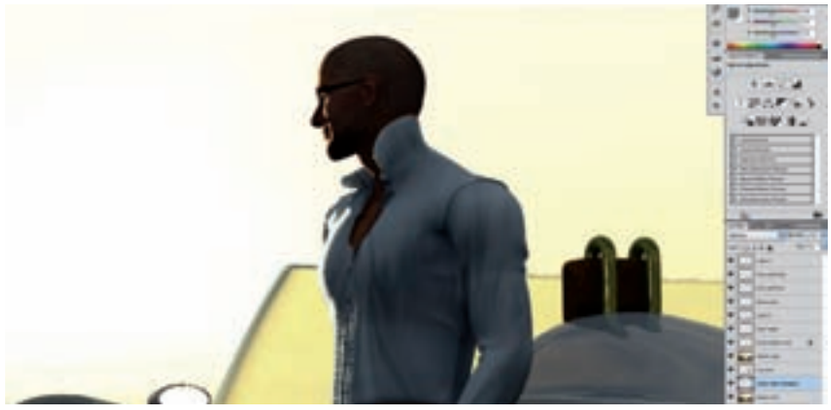
18 **Instead of recycling** the rendered dress, I utilised a photo of blowing material to give it more of a sheer look in the sunlight. While I was in the area, I painted in the shoe straps the woman is holding using basic brushes and added subtle highlights.



19 **After adding the** blowing material, the tight up-do hairstyle just didn't look right, so I erased some of the rendered hair and made some new hair using a custom brush. The brush is all in greyscale, but I had some red colour to complement the red dress and the golden sunset.

Accessories

Add minor details that make a major difference



20 **With Victoria looking** sharp, I started detailing Michael. Having forgotten to add them in Poser, I painted on a simple pair of sunglasses. Then using a soft brush and a slightly smaller Eraser, I added some wrinkles to his shirt and cloned in the portion that tucks into his trousers.

Fix clothes with the Clone tool

The trouble with Poser is that sometimes clothes just won't fit the pose no matter how much you tweak them. Instead of spending time fixing all the annoying little poke-throughs and fitting issues in Poser, just clean them up in postproduction with a few quick clicks of Photoshop's Clone tool.

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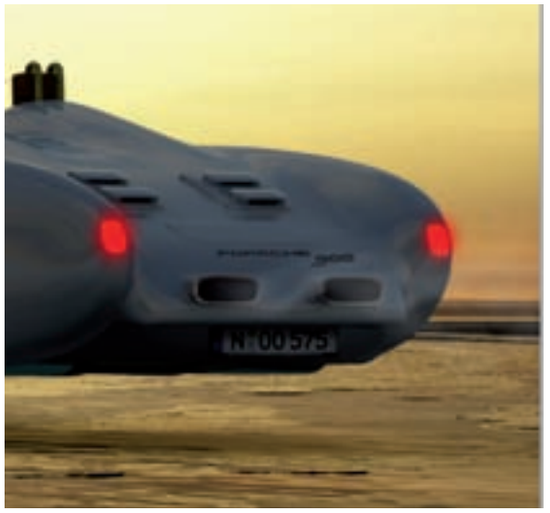
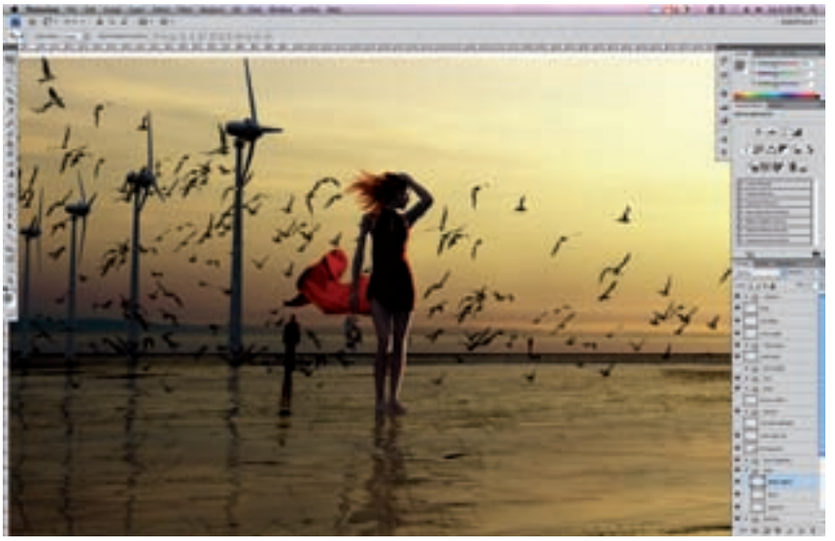
12 hours
Render time
Resolution:
6,000 x 3,992

Rendering and postprocessing

Introduce details to the scene

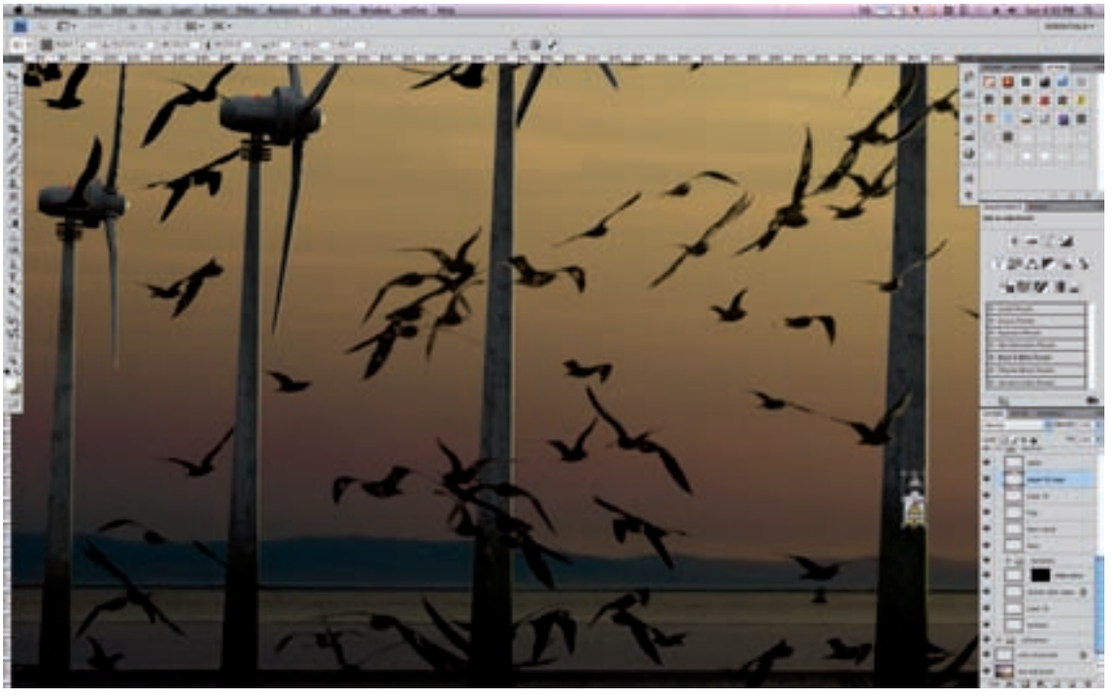


21 **The Speedster is** nice but lacks the detail needed for a shot like this. I started by adding details of sheet metal, a latch assembly and decals to the end of the door. Next came proper badging, a numberplate, some additional rear light glow and a little exhaust vapour.



22 **While I could** have easily rendered seagull models, it was just as easy to assemble one in postproduction using a few custom seagull brushes. After getting them all placed, I duplicated the layer, flipped it vertically, reduced the Opacity value and then used the Wave filter to create a convincing reflection.

23 **The turbines needed** a little texturing, so I added a couple of grungy metal materials and set them to Multiply – one as an overall grime and then a second to give the effect of the water line. For additional detail, I added a couple of decals and a light to the top.



The benefits of many textures

Many artists try to use a single material in their render instead of using layers to build rich textures with lots of depth. Multiple texture resources blended together in postproduction using blending modes can yield some excellent results, which can be the key to taking an image from good to great.

24 **One of my** last steps was to merge all the layers, clone the water over the actors' feet and reduced the Opacity value to make it look like they were in the water. Finally, I painted a little bit of sand onto the bottom of their feet for an added touch of realism.

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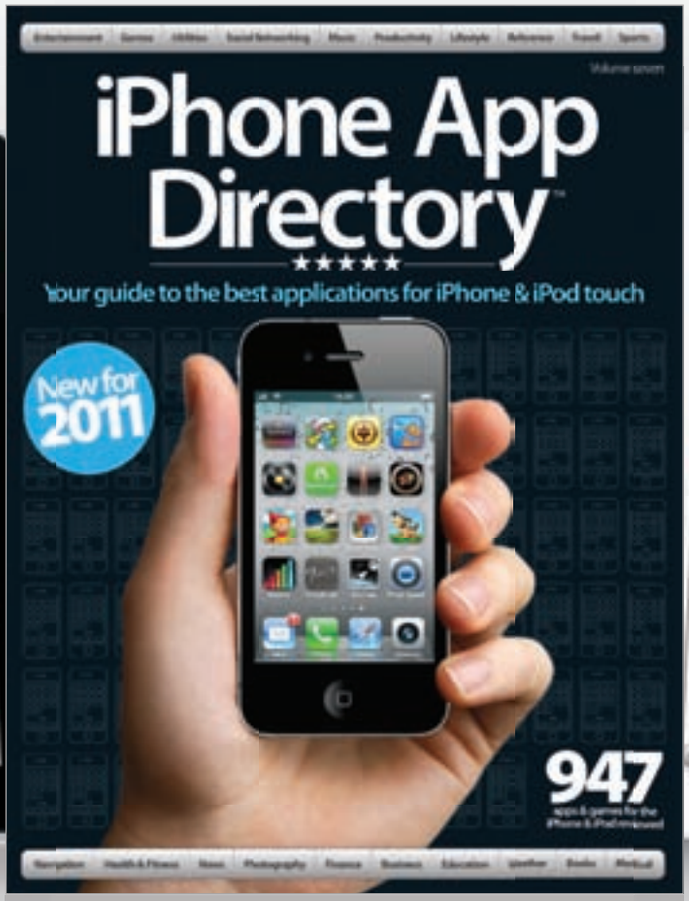
It's a jungle out there. Swing through it

iPad



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I made this...

Incredible 3D artists take us behind their artwork

Artist info

Tommaso Sanguigni

3DArtistonline

Username: tommix

Personal portfolio site www.tommasosanguigni.it

Country Italy

Software used CINEMA 4D, Mudbox

Software used in this piece

CINEMA 4D

Mudbox

"The illumination was probably the most challenging part of the project. There are many different light sources: the red neon sign on the left, the neon from the shelter, the circular sign on the right and the lights from the truck. The scene has 63 lights in total. To achieve a cool night illumination, I spent time setting an appropriate light falloff. The glow effect of the signs is a mix of a postproduction glow effect assigned to the material and a simulated glow obtained by lighting the signs with a front light. This combination lends a softer and more believable look than the standard postproduction glow effect alone"

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"Each model in the scene was created from scratch. Due the high number of objects in the scene, I had to work very quickly in the hope of finishing within the deadline. The first thing I did was create very low-poly versions of the objects to fix the camera. This let me evaluate the level of detail required for each mesh according its visibility and its distance from the camera. The box modelling technique gave me the chance to refine each model until I had the desired level of detail"

"The final render used Multi-Pass, which gave me the possibility to fine-tune every element of the scene in postproduction. The dust and smoke at the base of the spaceship and the Ambient Occlusion channel had been generated in a separate render"

Did you fill up the tank on Mars? 2009

This illustration was created for the Accident challenge on CGArena.com. I tried to create an original and funny illustration, which deviated from the standard idea of an accident, eg, car crashes, plane crashes and so on. I got the idea of the spaceship crashing on the Earth, and – for a silly reason – running out of fuel. Before crashing, the aliens tried to reach the nearest fuel station but they didn't reach it in time. That's why they have come out from the spaceship to refuel with a petrol can in the petrol station.

I wanted that this scene to have a slightly retro style. The funny look the aliens have was inspired by the aliens in *The Simpsons*. I added a truck near the spaceship to help the viewer appreciate the proportions between the spaceship and the other elements.

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Step by step: Create a photoreal face

Stifled Smile 2009

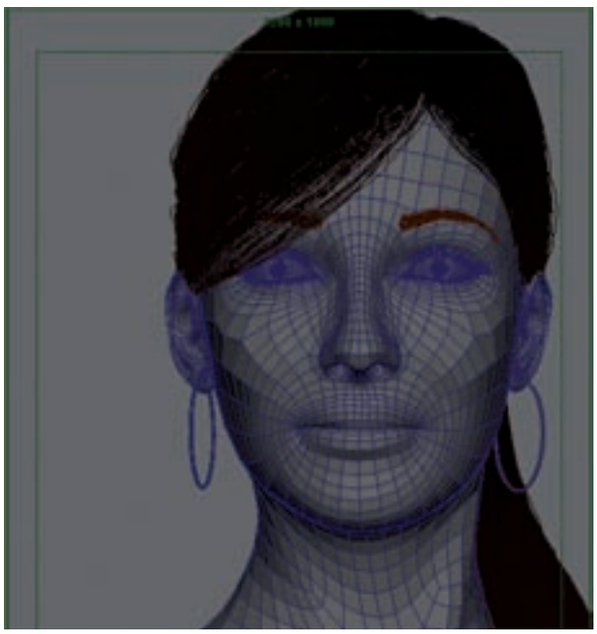
"The purpose of this image was to create a hyperreal face of a female with certain emotional characteristics"

Alexander Lashko specialises in character modelling and texturing

This tutorial was designed to show some of the techniques and workflow that were used for creating the 3D still image *Stifled Smile*.

Maya was used to create the base mesh as well as the main renderer (mental ray). ZBrush helped with most of the sculpting and texturing (no photo projection was used). Finally, Photoshop was used to composite all the separate layers rendered out from Maya. Maya's Hair and Fur was used to create the hair and eyebrows. The most difficult part in creating the image was creating the hair, since I had never dealt with it before.

I decided to create one of the most adorable human emotions, which is when a person is trying to hold back a smile. There was no specific reference of a woman that I followed, however, I did use lots of anatomy books and researched the muscle structure of the human face.



Concepts

Inspiration behind the figure

01 **The first thing** that I had to do was to gather as many references as possible. The preproduction stage is very important, since you have to know as much as possible about the subject that you are creating to make it look believable. I have countless anatomy books that I used as my main references, as well as images from the web.

02 **Once you have** gathered a good amount of references, then you have to sketch out some ideas on paper. I knew that I did not want to create a very complicated piece and mainly keep the viewer's focus on the face of the character. That is why I decided to simply make a portrait.

03 **Using the rule** of thirds, I decided to shift the model a little bit to the right as well as bring her right shoulder forward a bit in order to create some depth. I knew that the background would be plain or really out of focus to keep the composition free of distractions.

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Step by step

Easy-to-follow guides take you from concept to the final render

Artist info

Alexander Lashko

3DArtistonline
Username: lashkoalex

Personal portfolio site www.lashkoalex.com

Country USA

Software used Maya, mental ray, ZBrush, Photoshop

Expertise Alexander specialises in character modelling and texturing

Software used in this piece

Maya | mental ray | ZBrush | Photoshop

Modelling, Composition, Texturing

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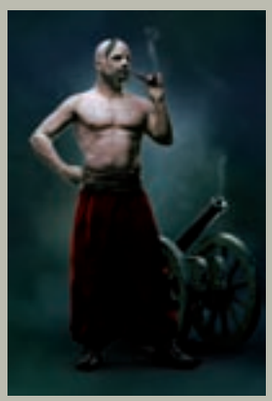
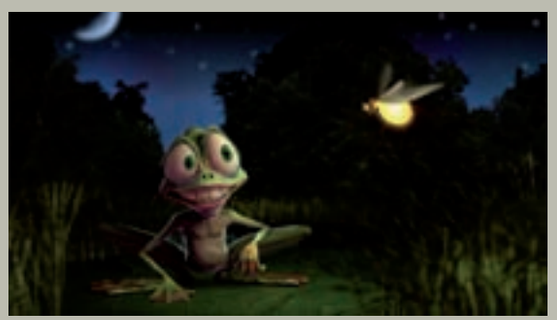
Artist Showcase

Alexander Lashko

From a very early age I enjoyed drawing and making small sculptures out of clay. It wasn't too long ago that those interests transferred into my profession, which I never foresaw. After seeing classics such as *Monsters Inc.*, *Finding Nemo* and *Madagascar*, I discovered my passion for 3D art.

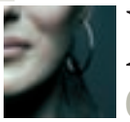


Cossack **Maya, mental ray, ZBrush, Photoshop (2009)**
This is a 15th Century Ukrainian warrior. Being born in Zaporizhzhya, Ukraine, I wanted to create a tribute piece to the fearless protectors of the region during that era. Sculpting was the most time-consuming part of this project. During the process, I learnt a few good tools for posing characters in ZBrush



I Wanna Fly **Maya, mental ray, ZBrush, Photoshop (2008)**
The idea for this character came to me while I was in college. I sketched the frog during a boring class. It was only some time after graduation that I was able to go back and create this character in 3D. The environment in this image was mostly created from 2D pieces in Photoshop

Doberman **ZBrush (2007)**
This dog was one of the assets that was used in my graduation demo reel. I chose to create this particular quadruped because it has very short fur, which allows you to see all the underlying muscles of the animal and makes it so much more interesting to look at



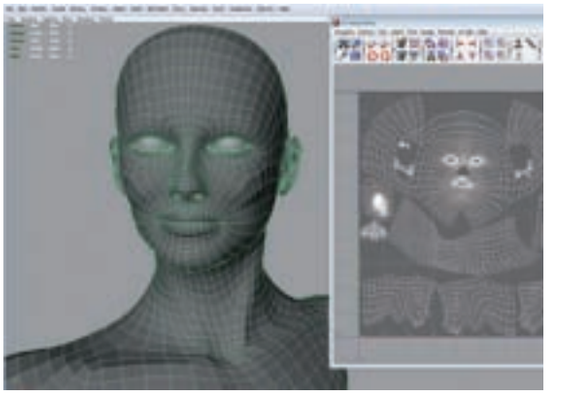
Modelling the figure

Creating the perfect expression

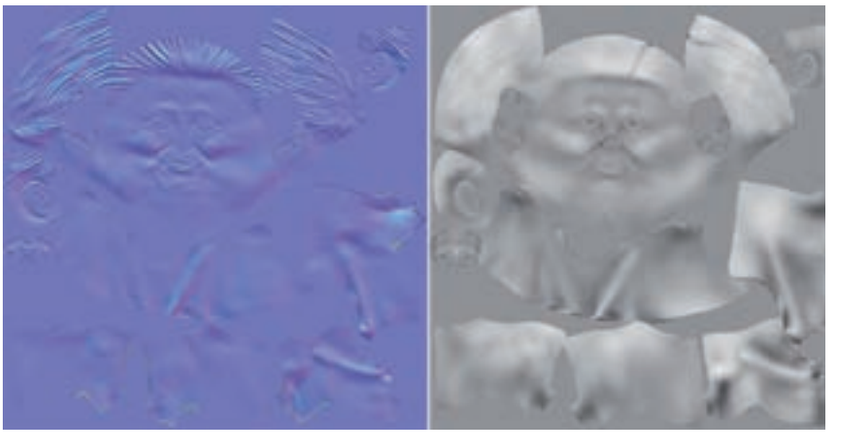
04 **When the preproduction** stage was complete, I moved on to making the model. I did not worry about the proper edge flow of the model at the beginning. Creating a very simple base mesh will eliminate the frustration of pulling and pushing vertices one by one. Instead I used ZBrush for sculpting the model, which will speed up the process.

05 **Once you have** a model that looks fairly good with all the established proportions, it is time to make sure that the edge flow corresponds to the model's anatomy. The main reason for this is to make sure that your model is suitable for animation in the future.

06 **When the topology** is in order, I took the newly created mesh to Maya and laid out the UVs. I then brought the model back to ZBrush and started sculpting the model according to the references I had at hand. New details emerged at each subdivision level.



07 **The fun part** that most of us enjoy doing is creating the small details. Those things such as little wrinkles, pores, beauty marks and some imperfections in the skin really sell the believability of the character. The use of layers in ZBrush helps here, because you can control how much the small details will pop.



08 **Finally, when you** feel like the model is complete with all the little details in place, export the model in the software package of your choice. Also don't forget to generate the surface detail map, such as the Displacement map and/or Normal map. We can use those maps as guides for texturing later.

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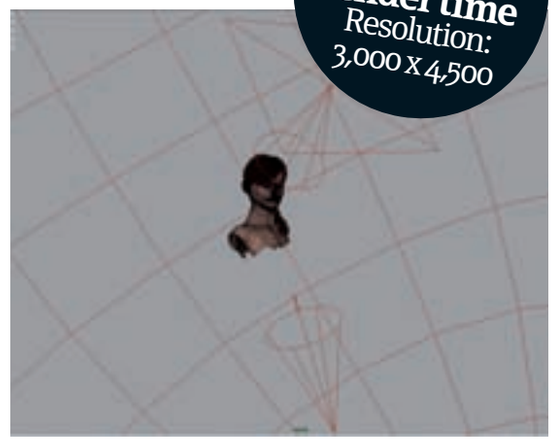
Skin textures and lighting skin

Getting it to look realistic

50 minutes render time Resolution: 3,000 x 4,500

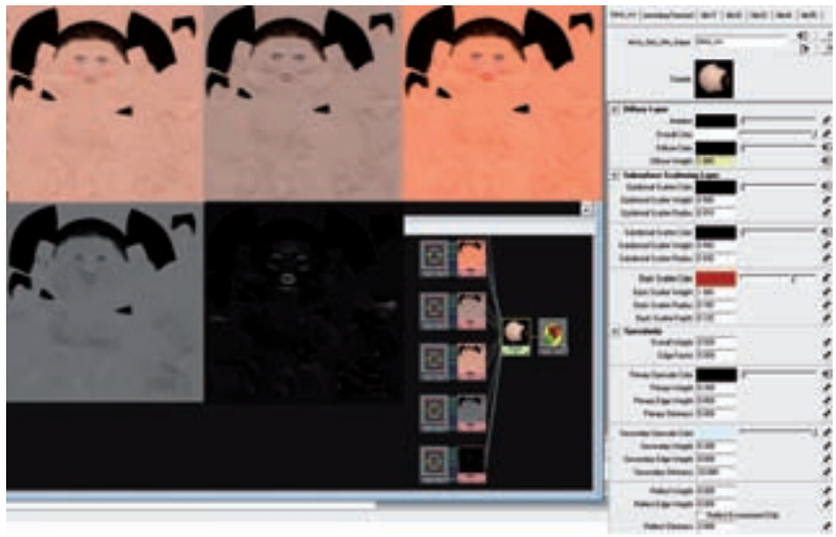
09 At this point I had the finished model and it was time for lighting and texturing. Initially, I preferred to light with the standard lambert shader assigned to the model. This allowed me to distinctly see how much light I would need in the scene. Later when I used the subsurface scatter shader, I could adjust the lights as needed.

10 The lighting setup in this particular scene is quite simple. There is one key light that is illuminating from the top and a fill light that comes from the bottom of the scene. An HDRI sphere was used to produce reflections (ie eyes, earrings), but I did not find it necessary to use Final Gather here.

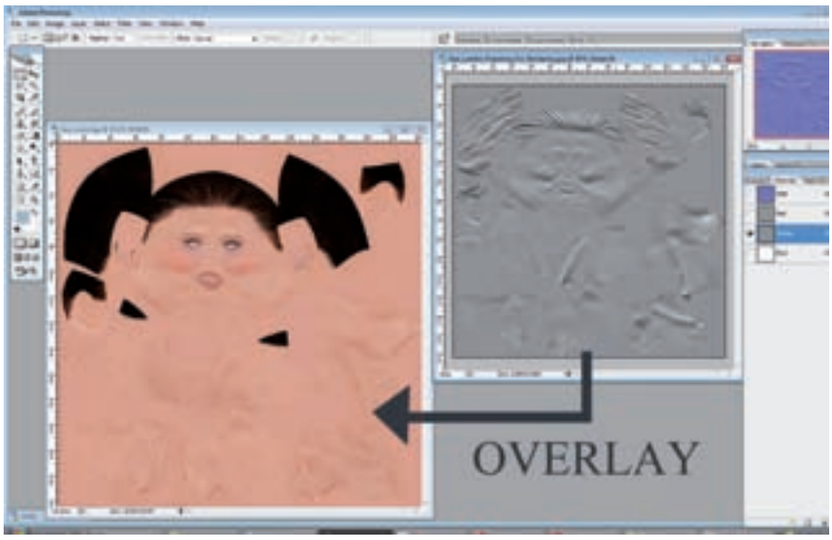


Rendering

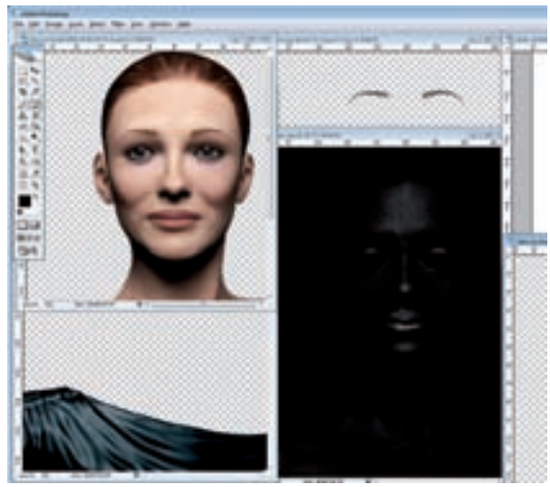
One of the most problem areas was creating good-looking hair. Since I have never dealt with CG hair before this project, I was not sure how to approach it. At first the idea of having the geometry hair was quite appealing, but I could not get the results I wanted and it seemed quite frustrating. Then I started exploring the world of Hair and Fur, which really scared me prior to using it. Because hair takes a long time to render, the idea here is to start with very small amount of hair and tweak it until you are happy with the results.



11 When the lighting was blocked out, I moved on to setting up the SSS shader. The main point here was to create the organic feel of the skin, which absorbs light and has a slight feeling of glow. However, be careful, as it is easy to overdo this effect and turn your model into a wax statue, which is an effect that you obviously want to avoid.



12 All textures were painted by hand mostly in ZBrush. A trick that I have picked up from one of my artist friends is to take the Normal map, copy the green and red channels from it and overlay them in Photoshop over the colour map. Of course, you will need some tweaking afterwards, but this is a great starting point.



13 The method of rendering separate passes is great for adjusting your final image. This way you can control such things as reflections, shadows, specularity and overall colour correction. Here are some of the passes that I rendered separately: hair, eyebrows, eyelashes, body colour, body specularity, shadows, Z-Depth and ambient occlusion.

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I made this...

Incredible 3D artists take us behind their artwork

Artist info

Sreenath K.P.

Country India

Software used Autodesk Maya 2008 and Adobe Photoshop

Very fine colour correction processes were done using Photoshop CS3 to get the final result

The Parker House 2009

My name is Sreenath and I am from Kerala, India. It's been three years since I started working as a CG artist for a small animation company. I have also graduated with a degree in Visual Communication.

"For lighting, I used my regular method of a three-point light system with some alterations, with a Dome Light setup. I used mental ray for rendering, taking different passes and compositing in Photoshop"

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"I used Maya for the entire process apart from Photoshop for the texturing and compositing. The props were done using a polygon box modelling method. The tools I used include Extrude, Split Polygon and Insert Edge Loops while modelling the scene"

Software used in this piece

Maya Photoshop

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Create a post-apocalyptic world

Judgement Day 2009

“For this portfolio piece, my objective was to create a dramatic and highly realistic scene of citywide destruction”

Robert Kenneth Sharo is a freelance 3D artist and consultant

behind the scenes

3D artists explain the techniques behind their amazing artwork

Artist info

Robert Kenneth Sharo

3DArtistonline

Username: rob_sharo

Personal portfolio site http://sharo.cgsociety.org/gallery/

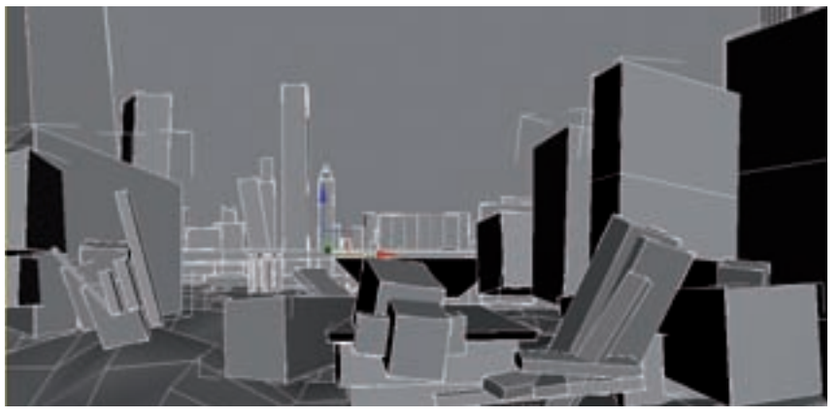
Country USA

Software used 3ds Max 2010, Maya, ZBrush, Photoshop

Expertise Environmental 3D art (high and low polygon)

Concept

Early concept art of the scene was created to establish the camera position, perspective, lighting and composition. This 3D scene will be refined later to block out the scene for production.



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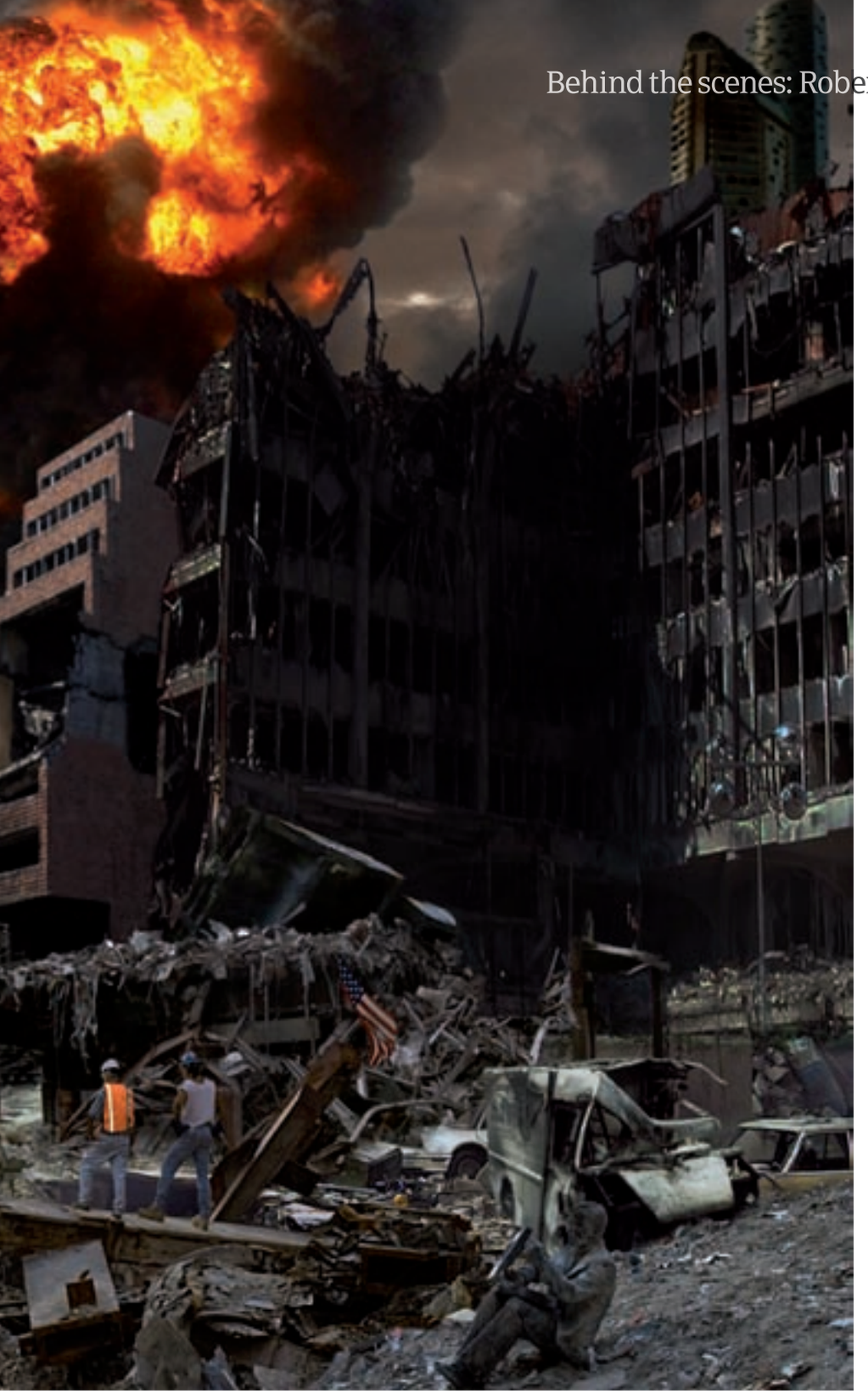
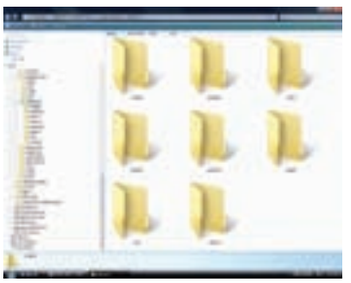


This tutorial's main purpose is not only to show how I made the scene, but also to share some of the techniques I used to create an efficient yet highly detailed scene that conforms to hardware and software limitations. Unless you have a very powerful computer, care must be taken from start to finish in keeping complex scenes such as this from crashing.

To produce the scene, I had to draw upon a wide range of skills from preproduction through to postproduction. During preproduction, many hours were spent researching the subject and gathering references. In my opinion this time and effort is critical for the overall quality of the scene. Not only does research help you better understand your subject, it also greatly aids execution and will drastically impact on detail and scope.

Major obstacles that had to be overcome in the production phase were creating excellent-quality textures and highly optimised models to maximise realism and minimise the demand on the PC's resources. In postprocessing, the final image was enhanced using single-exposure HDRI processing. The software utilised to produce this image consisted of 3ds Max, PyroCluster, Photoshop and Topaz Adjust.



A Stay organised – create a project directory structure with an area dedicated to organising asset files

01 Research and reference

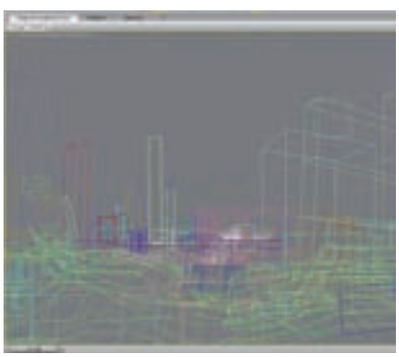
The first task is to research your subject and to collect as many references as possible. For a scene such as this, research large disasters, collapsed buildings and overpass bridge failures, etc. Make a directory on your hard drive with the project/scene name and a subdirectory called 'reference'. From this research, make a list of elements to include in the scene and get reference images on each. In your reference directory, make a folder for each element in your list to dump the reference in. Stay organised when acquiring references A.

02 Initial 3D scene setup

Set up the initial scene in 3ds Max by setting your measurement units, a camera and one light. Now establish the scene horizon. The camera and light can be any type and set that you wish, but make sure you set it so that it is immobile. If appropriate, set the camera and light targets to static as well. I suggest the simple approach and tick all the transform locks in the Hierarchy tab's Link Info submenu. Sometimes freezing objects can produce undesired effects. This is your base 3D scene B.

03 Block out the scene in 3D

If you created a concept file in 3D, use it to block the scene out in simple 3D objects for each element on your list. This step is critical to producing this scene. By blocking out the elements you can refine your composition, object placement, lighting and decide how much detail each object will have. Since the camera is static, only parts of objects facing the camera need to be modelled, and the further an object is from the camera then the lower the polygonal and bitmap detail. This blocked-out scene will help keep optimisation and composition on track C.



B A static camera and a static standard light is placed in the initial scene 3D environment

C A 3D blocked-out scene provides a blueprint that guides object detail levels and composition

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D Pictured is the completed photorealistic illuminated base sky texture. 3ds Max can natively use OpenEXR files

E This is a completed realistic high-resolution debris bitmap with tuned brightness, contrast and colouring

Problems and solutions

In this environment the modelling is driven by the blocked-out scene refined in Step 3. Generally, it's best to start with elements furthest away and work towards the camera. The most difficult problem to consider is model optimisation and the power of your PC. 3ds Max can get unstable and crash if you load on too many plug-ins, polygons and complex lighting. The answer is to model many major elements in a separate file and composite them into the scene. In 3ds Max, you can create a proxy by simplifying a clone of your existing model or you can build simple substitute objects, like boxes or cylinders. With proxies, you link a simple proxy or stand-in object with a more detailed 3D model in an external file and avoid loading your detailed model in memory, as well as speed up the time of test renderings and viewport redraws.

Consult the 3ds Max help options for more information on using xref and proxy objects. Whenever possible, real-time, low-polygon modelling techniques learnt from the videogame industry were used, such as tightly controlling the level of detail, manually culling unseen faces and billboarding complex objects like trees, debris, bridges and buildings where applicable.

04 Create a dramatic sky

Since this is an outdoor scene, the lighting in the sky background will dictate the 3D lighting you will use in your scene. The angle and azimuth of the sun is critical to a realistic link between the background sky, clouds and the elements in your scene. When creating a quality background sky map, use HDR images. Create an OpenEXR format file for use in your background and, if possible, for all textures. OpenEXR is a high dynamic range (HDR) image file format developed by ILM for use in computer imaging applications. Learn more and download the OpenEXR Photoshop plug-in at www.openexr.com D.

05 Create a debris base texture

The debris field areas are driven by the quality of the texture bitmaps. Simplified geometry will be greatly enhanced by the complexity of the realistic textures. This texture focuses on the smaller debris usually piled on the ground. Larger wreckage is layered on top of the piles to break up the smoother mounds of debris. OpenEXR format is suggested for maximum realism and details. Use tools in Photoshop and make the bitmap tileable using the Offset filter and Clone tool. I strongly suggest creating several large bitmaps if your reference and time allows it E.

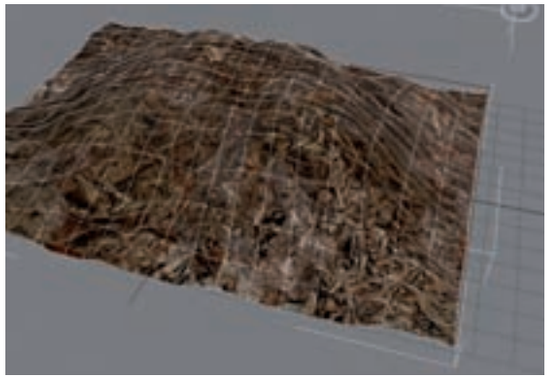
F Here is a completed realistic high-resolution wreckage bitmap with tuned brightness, contrast and colouring

06 Create a base wreckage texture

The larger objects of wreckage are also driven by the quality of the texture bitmaps you create. Simplified geometry will again be greatly enhanced by the complexity of the realistic textures. This texture focuses on the larger chunks of debris usually piled on the smaller debris. To break up the smoother mounds of debris, larger wreckage is to be modelled and placed in and on piles of debris. Again, I highly suggest using OpenEXR files for this and all textures F.

07 Model the debris elements

Using your debris maps as reference and guide, create the 3D model. Create a simple mound-like object in 3ds Max and apply the debris texture. Adjust polygons and mapping to achieve optimal results. Let the Texture map work for you. If you desire larger chunks of debris, scatter wreckage objects on the piles of debris manually or use the Scatter plug-in. You could use the RayFire plug-in to realistically break objects into smaller pieces. Debris can be overlapped to create larger debris fields; just be sure not to have any noticeable repeats or tiling and keep it random G.



G This is a wireframe of a sample debris basic pile before it went through the optimisation process

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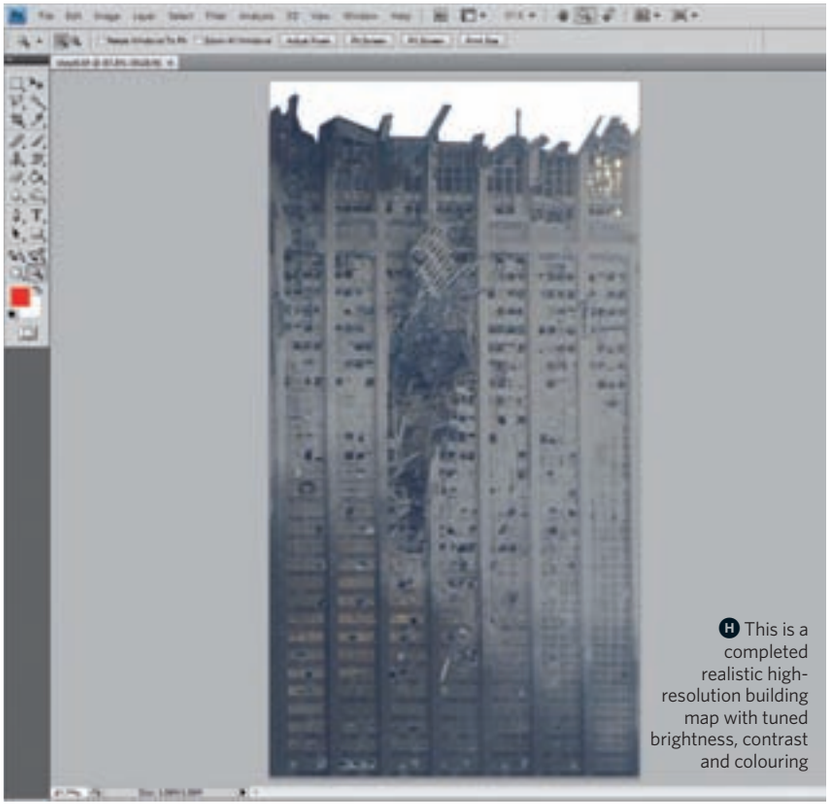


H This is a completed realistic high-resolution building map with tuned brightness, contrast and colouring

Lighting and rendering

For this scene, many factors regarding lighting and rendering had to be taken into account. Precalculated lighting is an option but keep in mind that radiosity doesn't work with mental ray or xrefs. Considering the possible complexity of the scene, I wanted to avoid large lighting calculations associated with Physically Correct Lighting and Global Illumination. In the end I chose standard lighting and the Default Scanline Renderer built into 3ds Max. The advantages are that since the camera, lights and objects were static, I could build lighting realism into the Texture maps and any plug-in works with standard lighting and the Default Scanline Renderer. The only plug-in I planned to use was PyroCluster, but it's better to be safe than sorry for such a complex scene. AfterBurn, FumeFX or even simple bitmaps could be also used for the smoke and explosions, depending on your PC power and plug-in availability. I was hoping to avoid running time-consuming smoke and fire simulations so I stuck with PyroCluster.

If 3ds Max becomes slow or unstable, render the elements you created and composite them into the background of your final scene file. Do this with each object from background to foreground, as this will radically optimise your scene.

> "Simplified geometry will be enhanced by highly realistic textures"

08 Create building and structure textures

The building object geometry is driven by the quality of the texture bitmaps you create. Simplified architectural geometry will be greatly enhanced by highly realistic textures. Again, I suggest using OpenEXR files, as this texture focuses on collapsed and damaged buildings and needs maximum details and lighting information.

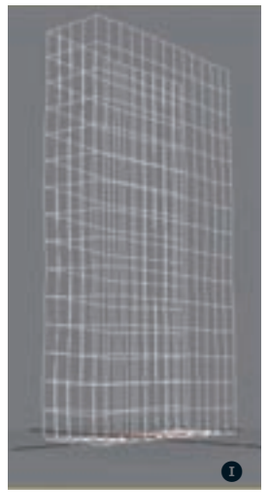
At this time, go to your building reference directory, choose the best damaged building bitmaps and create suitable texture bitmaps for your buildings using Photoshop and the OpenEXR plug-in. Repeat this process for each building, structure and element H.

09 Model a building or structure

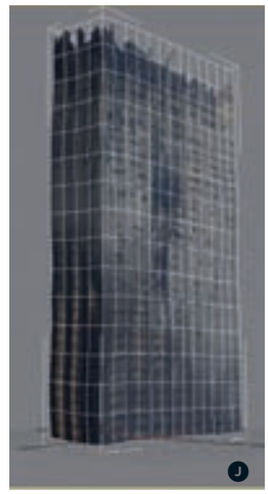
Create a building element object in 3ds Max using as simple geometry as possible. Models of damaged buildings can quickly add polygons and rendering time to your scene. Use caution and model efficiently. Using your building maps as references and guides, create the building. Adjust vertices and polygons to achieve optimal results. Let the detailed building Texture map work for you and conserve polygons. You could even use the RayFire plug-in to realistically shatter or damage the building model or other element models, for instance if you wanted to add broken statues in front of a building I.

10 Apply mapping co-ordinates and texturing

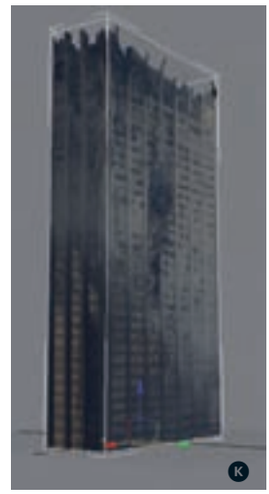
In this step we must apply mapping or UV co-ordinates to the element 3D model. Since most of the building and structural element models are rectangular, you can use standard gizmo-based mapping (planar, cylindrical, etc) or you may apply UV unwrapping to get more specific control of mapping. The choice is yours; I use either but the general deciding factors for me usually depend on how specific I need to map or how quickly I need to map and texture the asset. Unwrapping UVs takes much more time and may be a waste of time on some objects J.



I Here is a building element after initial modelling and texturing before refinement and optimisation



J This is a fully modelled wireframe of a building before texturing



K This image is the final textured and optimised wireframe model of the building

11 Refine and optimise the building element

In this step, you must optimise the 3D model and refine it for maximum visual impact and realism. While doing this, keep in mind the effect of polygons and optimisation. Delete any faces that are duplicate or not visible; 3ds Max can cull back faces but it's far better to do it manually. This keeps the file size down and minimises lighting calculations and unneeded vertex information during rendering and viewport screen redraw time. Just be sure not to have any noticeable repeats or tiling and keep it realistic K.

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Artist Showcase

Robert Kenneth Sharo

Back in 1994, I changed career dramatically from professional aviator to 3D artist, and began providing 3D art and animation for the architectural, engineering, corporate and legal sectors. Since then, I have created 3D art for Fortune 500 companies, film studios and AAA videogame developers.

Carnevale Jester's Wedding Day **3ds Max (2008)**
Radiosity lighting and photorealistic textures are featured in this scene of an outdoor wedding of a carnival jester. The characters pictured are allegories for those in his life causing him drama

A Ride-Along with Death **3ds Max (2005)**
A large-scale city scene featuring a ride-along with Death, as he cruises the gritty streets of a futuristic city populated with references to popular sci-fi

Sunrise on Gateway City **3ds Max (2003)**
This is a complex cityscape consisting of over ten million polygons and 100 Texture maps. The dramatic lighting of the rising sun and motion blur of the star fighters anchor the scene

12 Maintain element environmental continuity

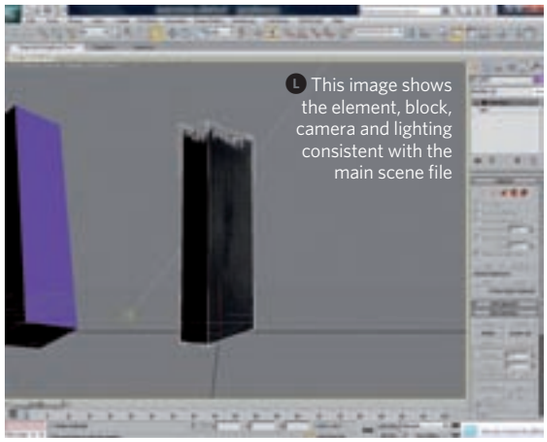
If you're not using xrefs then you'll probably need to composite many elements into your scene. Using your 3D blocked scene file, camera and lighting, render any elements to be composited into the final scene. Since each of these external element files already has the block/scale object, final scene camera and lighting, this is an easy task. Closely check the element for any defects, last-minute changes or enhancements. Check your camera view and do a test render if necessary **L**.

13 Position the elements

Now it's time to prepare, position and scale each element for xref or compositing. Do not move or delete the simple block object yet. First position, rotate and scale the detailed element model so it's in the same place as the simple block object. Check your detailed element pivot points and make sure they're located in the same place as the pivots on the block object. Delete the block object when the position and sizing is correct. Check your camera view and do a test render if necessary **M**.

14 Test and render the elements

When doing the final elemental rendering for compositing, be certain the camera and lighting are consistent with the final full scene file. Make certain your model has no mistakes, defects or inconsistencies and, if possible, make further optimisations of the element model before rendering and compositing or xref into the final scene file. Check once again for mapping repeats and polygonal detail repeats. If you want to change or improve something, this is the time to do it **N**.

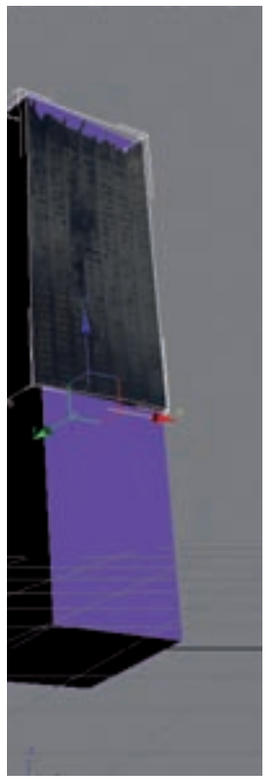


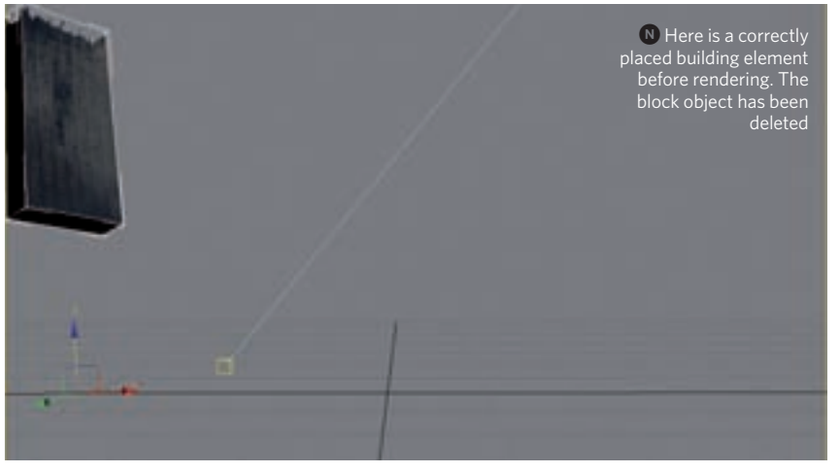
L This image shows the element, block, camera and lighting consistent with the main scene file

Textures

Use large bitmaps and consider the distance from the camera. Try to keep map sizes over 1,000 x 1,000 pixels. Match your lighting, contrast, brightness and colour hue for similar textures, for instance debris and wreckage. For maximum realism, I recommend HDR or OpenEXR format photographic textures over hand-painted textures.

M This image is of an element in the proper position and with consistent pivot points





N Here is a correctly placed building element before rendering. The block object has been deleted

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15 Final composition of object elements

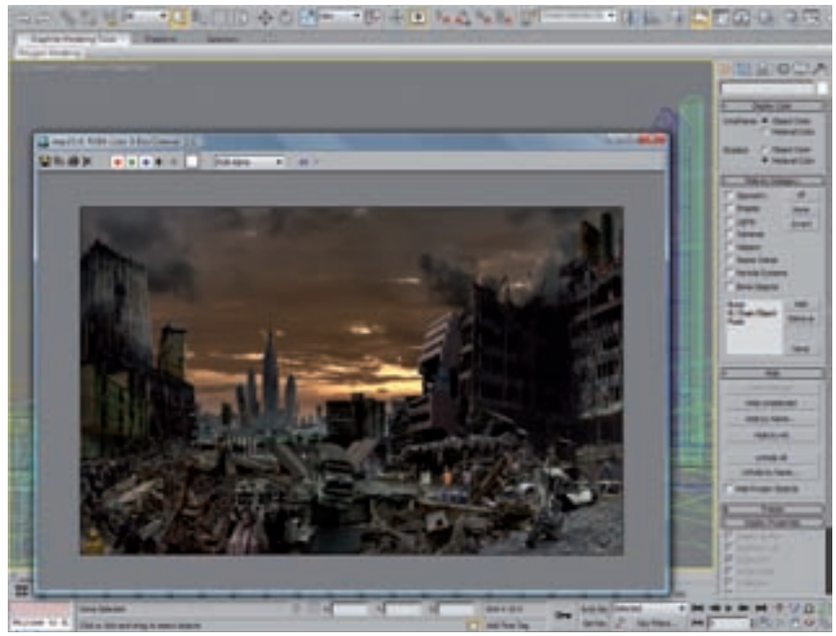
At this point, make sure all the elements you have created are composited, xrefed or otherwise added to the scene file. Import any remaining element assets except the PyroCluster smoke and explosion effects. Take some time to play with the composition to get the maximum drama and visual appeal. Check your lighting and shadows and make any minor adjustments as needed. Make sure you are not covering up any important background details with any of the foreground elements. With a scene this complex, it's easy to overlook small but important details that really help enhance the composition O.

16 Add explosions and smoke effects

Without the smoke and explosions the scene appears static and without atmospheric effects, providing continuity between the sky and the ground. It is essential to this scene to add the explosions and smoke in an efficient manner without crashing 3ds Max or having huge rendering times – unless you like waiting hours for test render checking or having 3ds Max corrupt your scene files! A variety of methods could be used for creating the smoke and explosions, but I decided to render the PyroCluster effects in separate files and composite the rendered effects into the final scene P.

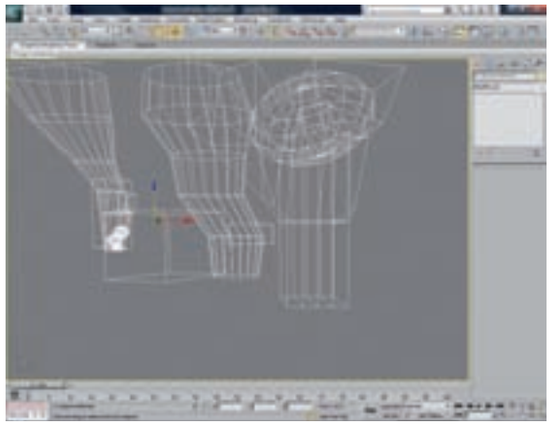
17 The final render

Now we can create the final rendering of the composed and completed scene. This will probably take several iterations. If your scene takes too long to render or 3ds Max crashes, you may decide to further optimise your scene. Consider replacing the PyroCluster effects and the more complex geometry closer to the camera with composited or billboarded elements that are much more efficient Q.



O This image is the final composition of elements prior to the smoke and fire effects

P These are the completed wireframes for the PyroCluster effects. If necessary, composite the rendered effects



Q Render the final scene and check for any errors, inconsistencies and defects

18 Enhance the final image via HDRI

The final step is enhancing the image via single-exposure HDRI processing then saving the image to a file. For this project I used Topaz Adjust, a third-party plug-in for Photoshop. Topaz is a simple-to-use HDRI processing application that can quickly do some amazing things to images. For the final work I processed the image to enhance the subtle details often lost in the rendering process. Care should be taken not to lose too much contrast, adding too much detail or colour when processed via HDRI R.

R This is a comparison of the image before (top) and after (bottom) HDRI processing

Rendering the image

The key thing to consider when putting together the final image is how much computing power you have to work with. If you have a very powerful PC, you can render the scene with less compositing or even have the PyroCluster smoke and explosion effects actively in the scene rather than composited. Since I don't have such a computer, I had to break the scene down to smaller elements, use low-polygon tricks I picked up while working in the game industry and xrefs to make it more manageable in viewport redraws, and to get shorter rendering times and stability.

12 hours render time
(including PyroCluster smoke and explosion rendering time)
Resolution: 3360 x 2100

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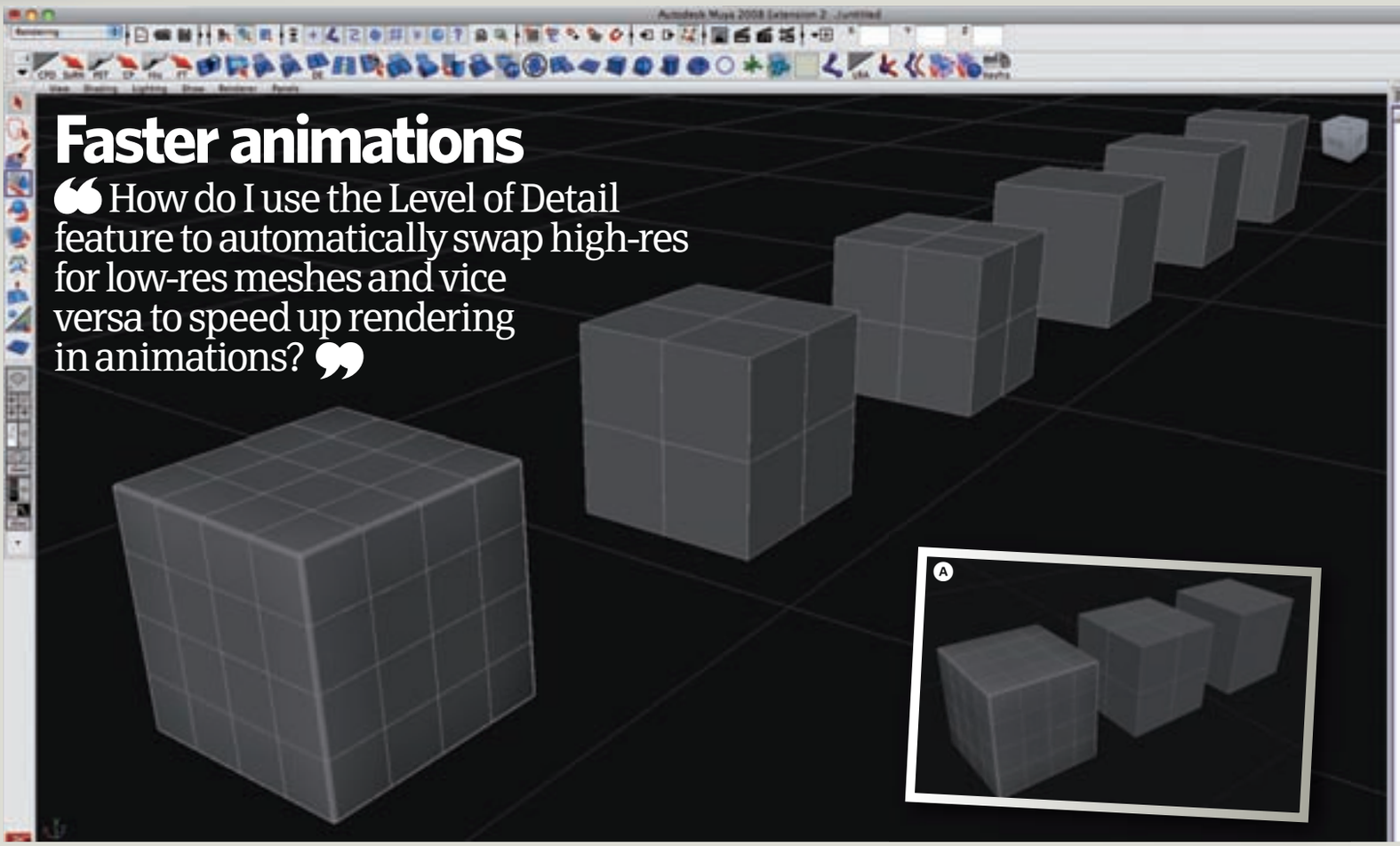
The Advisors

Maya: General
Lance Hitchings
www.hitchingsdesign.com

Lance is our Maya master and in this issue he discusses using the Level of Detail function to swap hi-res for low-res meshes and vice versa to speed up rendering times

Maya: Games
John Haynes
zugok@sbcglobal.net

John works on characters for games at Sega in California. In this issue he reveals the secrets of how to create clothing that drapes and hangs properly on game characters



Faster animations

"How do I use the Level of Detail feature to automatically swap high-res for low-res meshes and vice versa to speed up rendering in animations?"

Nothing brings a rendering engine to its knees quicker than a scene with a ridiculously large number of polygons. If your scene contains countless copies of a very high-res object that run off into the distance, you're in trouble. It would be great if you could use low-res versions of the object in the distance. But perhaps your animation calls for the distant objects to move in, so you will need that detail.

Maya has a feature called Level of Detail (LOD) that addresses this issue. As the far-off objects move closer to the camera, Maya will swap out the low-res geometry for another version of the object with high resolution and do it on the fly.

That way, you can keep the polygon count of your scene as low as possible for quick render times, while still retaining the ability to capture high levels of detail as objects move closer to the camera.

This feature was developed for use in game engines, but it can be exploited to work with animations.

01 Build multiple versions of your mesh

The great thing about the LOD feature is that it's incredibly easy to use. First, you will need to have built as many different versions of your object as you feel you will need for the circumstances. Each object will have a different level of polygon resolution and a different level of detail.

Here, I'm using a simple cube to illustrate three different levels of resolution. The low-res cube has six faces, the mid-res cube has 24 faces and the high-res cube has 296 faces (A).

02 Create a Level of Detail group node

All of your meshes need to occupy the same space and have their transforms zeroed out. The order in which you select your objects is critical. Select the highest resolution object first and then select the others in descending levels of resolution. This means you will be selecting the lowest resolution version last.

With all versions of your object selected, go to the Edit menu and select Level of Detail>Group. This will create a Level of Detail group node.

If you need to ungroup this node for some reason, don't use the Edit>Ungroup

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growing community at www.3dartistonline.com

3ds Max
Ryan Knope
info@ryanknope.com

Ryan is our architecture and 3ds Max expert. In this issue he's using material displacement to in order to create a realistic-looking outdoor patio surface

CINEMA4D
Daniel Lovas
http://lovas.cgsociety.org/gallery/

Daniel is our resident CINEMA 4D specialist. In this issue he is using the terrain data from Goodle Earth to create a 3D scene that can then be used as the basis for a new project

Vue
Dominic Davison
www.3dartistonline.com/user/Dom1

Dom is one of the top people creating realistic landscapes in Vue. In this issue he explains how to create low lying fog with volumetric materials

Poser
Paul Francis
www.3dartistonline.com/user/StormdrainGFX

Paul is a former modeller for programs like *Red Dwarf*, and he is also an accomplished photographer. This month he discusses the various parameters of the Cloth Simulation feature in Poser

Send us all of your 3D problems and we'll get them sorted. There are two methods to get in touch with our team of expert advisors...

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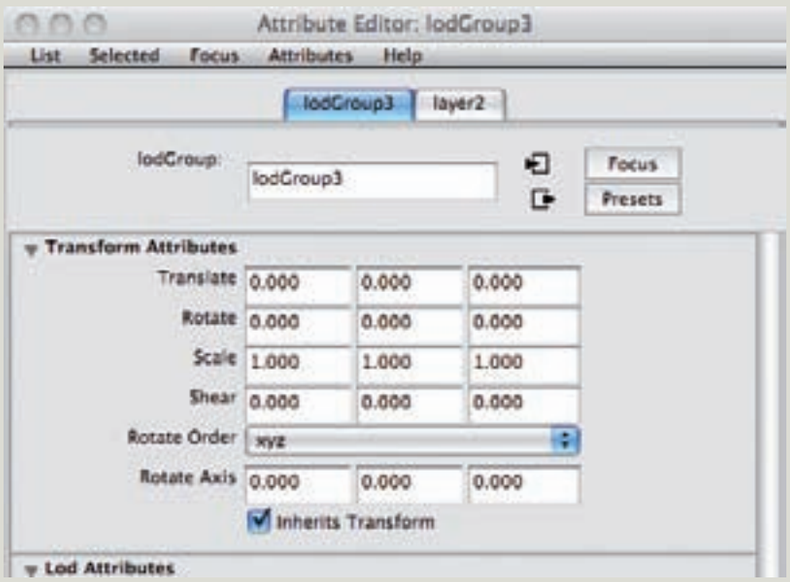

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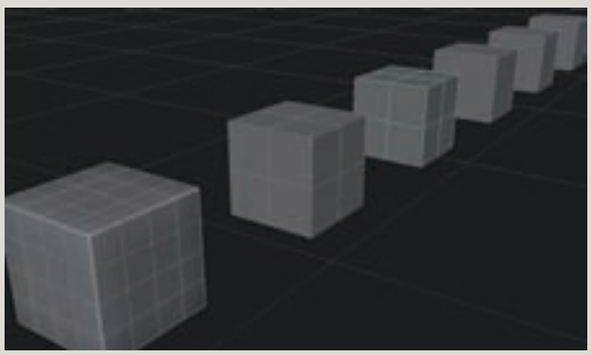
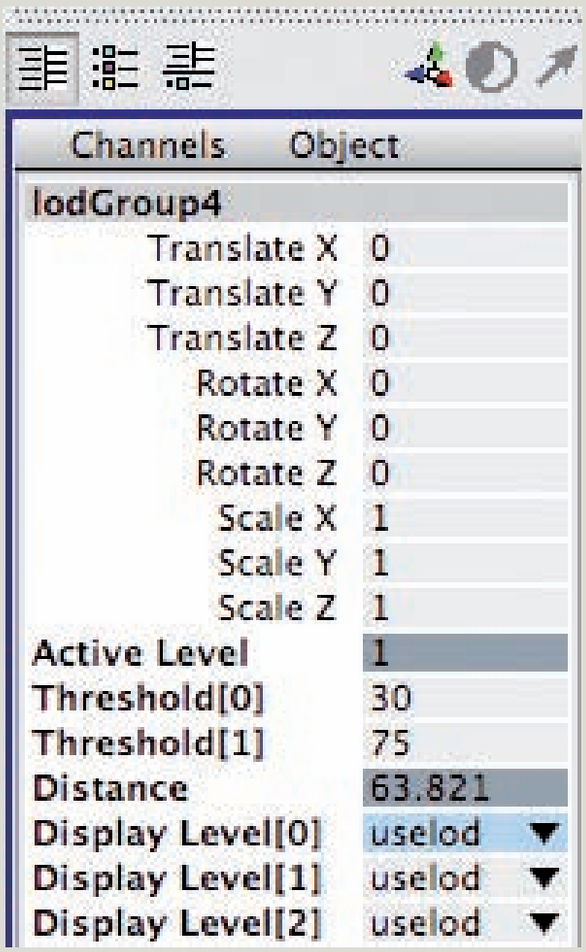


C



D

command. Instead, use the Edit>Level of Detail>Ungroup command.

03 Setting parameters

Set the parameters for the LOD group node in the Attribute Editor under LOD Attributes. If you want your object to disappear past/before a certain distance, use the Min Max Distance box.

Threshold parameters set the distances where geometry is swapped. If the object is closer than the distance in Threshold(0), Maya uses the highest-resolution – the first object selected when creating the LOD group node. If further than Threshold(0) but closer than Threshold(1), the next lower level of resolution is used. If further than the last Threshold, Maya uses the lowest level of resolution.

The number of entries in the Threshold array depends on the number of objects selected for the LOD group node. The entries in the Display Level array represent the different meshes, with Display Level(0) being the highest-res mesh. Here, you can set Maya to use the LOD feature to show or hide each mesh (useLOD), or you can show or hide each mesh manually from the pull-down menu B.

04 Set the threshold

With the LOD group node selected, the Channel Box displays the distance from the camera. With the third LOD group selected, you can see the distance from the camera (Distance in the Channel Box) is 63.821 world units. Since that's further away than the value in Threshold(0), which is 30, but closer than the value in Threshold(1), which is 75, Maya displays the mid-res mesh and hides the other two.

By zooming the camera in and out while keeping an eye on the Distance value in the Channel Box, you can determine the best values to use for the Threshold parameters C D.

05 Final thoughts

One thing to keep in mind is that the LOD group node seems to lose functionality if you duplicate it. So for each copy of your object, you'll need to duplicate each of the versions of the object and group them into an LOD group node. Additionally, only use uninstanced geometry in an LOD group node, as instanced geometry will not display consistently.

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3DArtist Your questions answered

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Soft fabrics

"How do I get soft fabric materials to drape properly and hang on my characters?"

Fabric shows the influence of gravity or motion, so keep this in mind when creating the look of draped fabric. Fabric tends to hang off the various landmarks of the human body, as well as from areas of tension (such as fasteners) and areas that bend (such as shoulders). Folds show the direction of force or energy, so it is best to have them originate from tension points.

When working on polygons, the edge flow is important for good character body deformation, but also to help provide a good flow of surface detail. Getting a proper fabric look usually involves working from big to small and establishing all the major edge flows early on.

Start by adding one or two folds that originate from the prominent elements that define the flow of the pose. Then add a few medium-sized fabric folds around the large ones and on areas that have compression or are affected by the flow from the key areas of tension. The final step is to add a few small short wrinkles at the areas where the others originate, as well as in areas where the wrinkles might intersect. These wrinkles show the most tension, and will either not affect the body silhouette or even cut into softer body areas, in the case of a very tight fold or costume. Also, depending upon the type of material they may not be present at all!

01 **The drape of** the fabric is influenced by the pose and how the fabric will be placed upon the body. In this example, the force mainly comes of the right hip and left shoulder. The fabric will then mainly flow from the left shoulder, so the major folds will originate from there.

02 **The main fabric** volume is created by use of a simple cylinder that's shaped to fit the flow of the fabric as it comes off the left shoulder. As seen in the image, the fabric and costume is placed over the whole body, as the various body forms will have a lot of influence on the drape of the fabric.

03 **Once the basic** flow and volume is established, the fabric shape is applied to the model and the folds are then added. The flow of the folds is dominated by the largest fold, with the smaller ones adding to them. I have also added a slight bit of wind force to add a bit of energy to the pose.

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Realistic-looking textures

“How do can I use material displacement on an exterior patio to make it look realistic?”

There are quite a few things to understand when using material displacement in mental ray. A major concern is that rendering times jump drastically because of the subdividing amount that is calculated.

Start by defining what you need your patio to emulate, and find good reference data and textures. When creating my displacement materials, I use Architectural and Arch & Design.

When creating my scenes, I often have several objects that use displacement. This can be a challenge because the mental ray displacement settings are global. When this problem occurs, it can take quite a few tests to find the subdivision amount and edge length that works for all of your objects and materials.

Keep in mind that lowering the edge length and raising the subdivision amount will drastically raise render times. I find that using a medium subdivision amount (about 4,000) and a lower edge length (.2 or .3) accommodates most of my objects quite well.

My biggest advice when it comes to this topic is to edit and test your render settings and displacement image map several times. Often, the first few tries do not turn out as planned.

For support files, please visit **www.ryanknope.com/3dartist**

Create the Arch & Design material

Identify which map types you will be using. Using Diffuse, Bump and Displace usually works well for me. I start off with a high-quality Diffuse map texture. Then I edit the diffuse texture to make for a placeholder Bump map and add that into the slot (edit the hue and contrast, later painting your desired details). Taking away the hue of the map and raising the Brightness/Contrast is how I begin creating the displacement texture.

If you want a hard-edged displacement, keep a sharp contrast between the raised and lowered sections. If you are looking for a soft transition and rounded edges, then blur the respective areas more.

In this case I wanted a soft, rounded look on some stones more than others. My brick displacement maps are usually a harder-edged transition.

Edit image maps

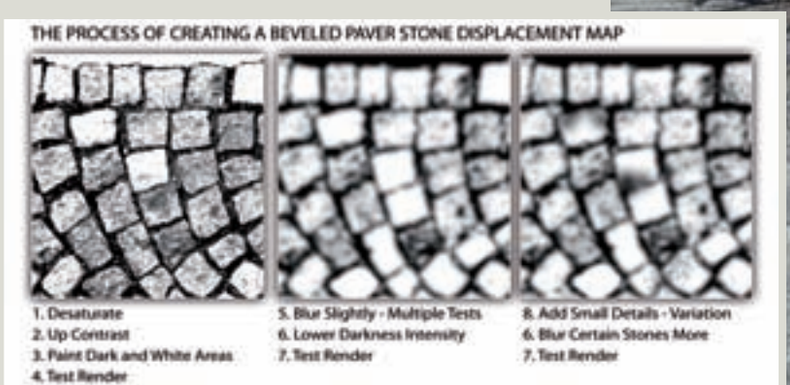
Often I have to almost totally re-create the Displacement map. Painting your Displacement map edits on a layer above your reference is a great idea (use the Bump map as a reference). Once you have created a sharp-sided black-and-white image, you can add it into the displacement slot.

At this point, check your render settings and get them in order to test render and edit your maps accordingly. After producing a test render, you may notice that you need to blur your Displacement map or paint more detailed low/high areas (black/white).

Render settings

These settings are as important as your material settings. Go to the Renderer tab and scroll to the bottom. You will find a section for Shadows and Displacement. Make sure View and Smoothing are checked. Change your Max Displacement to the distance of displacement that you need. This value works in conjunction with the displacement amount to create actual distance. I usually set this value a bit high and lower my displacement value in my material settings. Starting with about 4,000 subdivisions is good for starters. I also tend to lower the Edge Length significantly – in this case, I used a value of 2.

Right: Use Arch & Design in your material displacements


THE PROCESS OF CREATING A BEVELED PAVER STONE DISPLACEMENT MAP
1. Desaturate
2. Up Contrast
3. Paint Dark and White Areas
4. Test Render
5. Blur Slightly - Multiple Tests
6. Lower Darkness Intensity
7. Test Render
8. Add Small Details - Variation
6. Blur Certain Stones More
7. Test Render

This is the process I usually take to create my Displacement map

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Making real-world models

"How do I create a textured 3D model of existing terrain in CINEMA 4D using the data from Google Earth?"

This can certainly be done and is a good way of creating models of places you are interested in. Think of it as a limitless landscape reference library. But there are considerations. You'll obviously need Google Earth installed on your computer and, if you don't have it already, you will need to install Google SketchUp Pro. The unfortunate news is that the free version will not suffice, as it currently cannot export 3D objects. You'll need this program only in order to grab the data from Google Earth and then export it to a format that CINEMA 4D can digest.

The Get Current View function in SketchUp Pro is intended as a tool to help people who want to georeference and then export their 3D models to Google Earth. This explains why the exported 3D terrain is rather simple, but it will certainly do for most other purposes as well, as you'll see in this short tutorial.

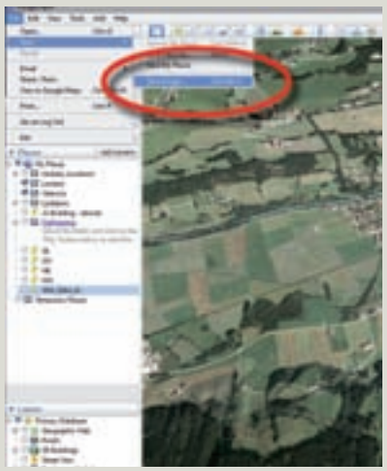
Your first step is to select the desired area in Google Earth, and then you have to switch to SketchUp Pro, grab the data from Google Earth and export it. I tried various export formats that both programs support. The DXF and DWG formats proved completely useless, as they don't carry the texturing information. The Collada format, for some obscure reason, refused to export the terrain geometry, while the VRML format has been discarded as a possible candidate for its nasty habit of exporting every single polygon as a separate object.

The Wavefront format might do the trick, especially if you are a lucky owner of the excellent Riptide plug-in (when will MAXON do the right thing and integrate it?). Since the model is pretty simple, you could do what I usually do in this procedure and use the 3ds Max format. If you follow my advice in the boxout to the right, you'll notice that you cannot turn off the Google logo and some other copyright inscriptions when saving the colour texture. This is how it is meant to be – it would be illegal to retouch them out. It is not illegal, however, to plan your camera positions so that they don't appear in rendered images...

The next step consists of importing the data into CINEMA 4D, adjusting the material of the imported object a bit, adding subdivisions to the rough terrain mesh, and finally add more detail by creating additional textures in a raster program and applying them in the Displacement channel to create fake fir trees on the distant hills. Read on to see how this is done.

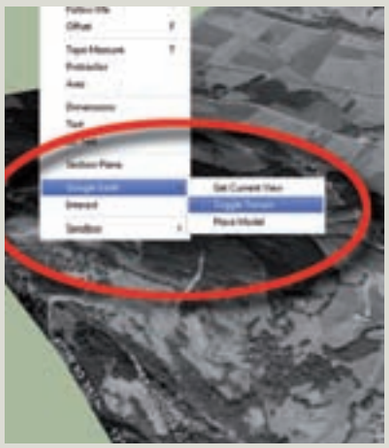
Uncluttered texture

Before you save a coloured texture from Google Earth in the first step, clean its viewport a bit. As I said, all the layers except the Terrain layer should be off. You might also want to get rid of the navigation tools, the Scale Legend and the Status Bar, as you probably don't want to get them projected over your terrain model. On the other hand, they might come in helpful for the correct orientation and scaling of the C4D scene. I usually save two versions of the texture – one with all of them displayed and another without them – and then switch them in the material when necessary.



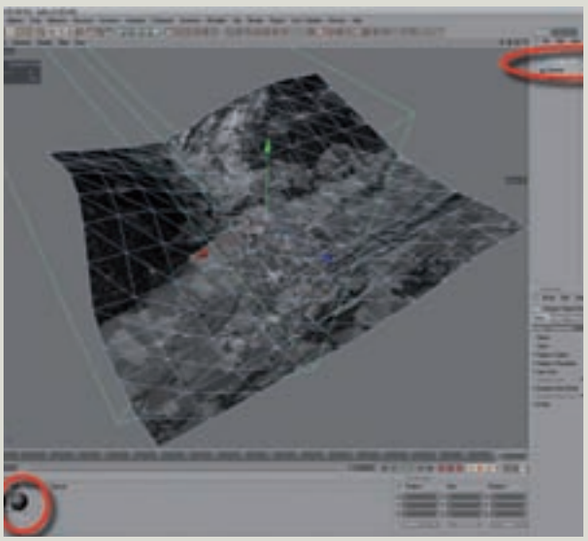
01 Select the desired area in Google Earth

Select your desired area of the Earth's surface and then make sure that the Terrain layer is active and all other layers are inactive. Don't position the camera too high because the data transfer to the SketchUp Pro will fail and you'll get a warning message. Before you proceed with the next step, there's yet another important thing to be done: File>Save>Save Image. You'll find out later why this is needed.



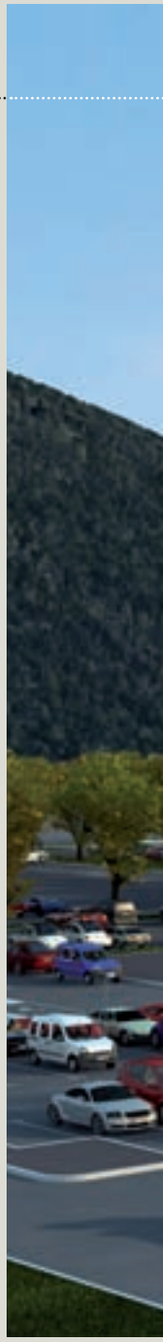
02 Transfer the data to SketchUp Pro and export

Don't change your scene view in Google Earth one bit after saving the image! Open up SketchUp Pro and select Tools>Google Earth>Get Current View from the menu. Unless your eye (camera) position in Google Earth is set too high, you should end up with a flat 3D mesh with a black-and-white texture of the area. Now select Tools>Google Earth>Toggle Terrain and export the model to a 3ds Max file.



03 Import the data into CINEMA 4D

Before proceeding with the import, open the CINEMA 4D preferences and visit the Import/Export>3D Studio Import section. Leave the Adapt Textures option as it is and set the Scale, depending on how large you want your imported terrain to be. Alternatively, you can resize the model later, using the mouse or by changing the values in the co-ordinate box. Now use the Merge or the Open command and select the 3ds Max file.



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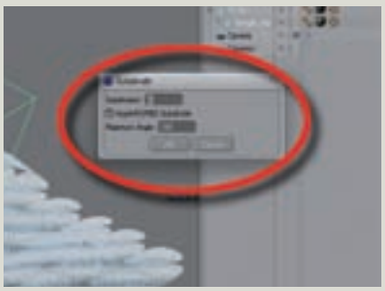
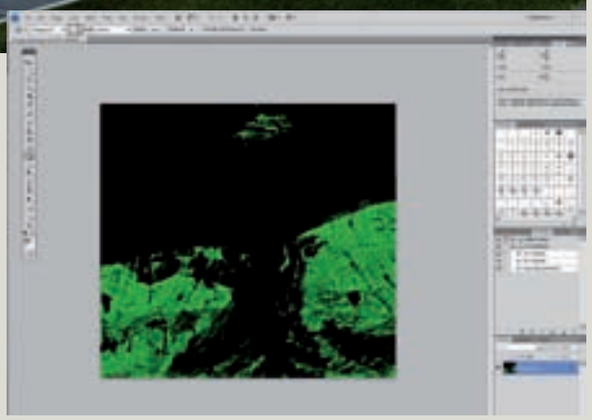
04 Adjust the material

The first thing you will notice is that the texture of the imported object is in greyscale. That's why we saved a coloured view from the Google Earth in the first step. Now transfer the previously saved image to your project's Tex subfolder and then replace the texture in the Google_E material's Color channel (Google_E.jpg) by it. You'll notice that apart from the original texture's apparent lack of colour, the two images are identical.



05 Increase the mesh density

The imported terrain is a low-polygon version, so the first thing I do is add some polygons by using the Subdivide function and setting the value to 4 and activating the HyperNURBS option. The latter option is necessary, as it softens the mesh, but it might create holes close to the edges of the model, so make sure your cameras don't catch them. You may even choose to mend them manually (Close Polygon Hole won't help you here).



06 Create the distant trees effect

Activate the Displacement channel of the material, tick its Subpoly option and then load a noisy image (try adding noise to the Google greyscale map as a starting point). Alternatively, use an adjusted Noise shader that should have high contrast and lot of small detail, so that you get lots of small spikes on desired parts of the terrain. You'll have to play a bit with the displacement settings and the shader to get the impression of distant fir trees on higher grounds, achieving a far more natural appearance of the terrain.

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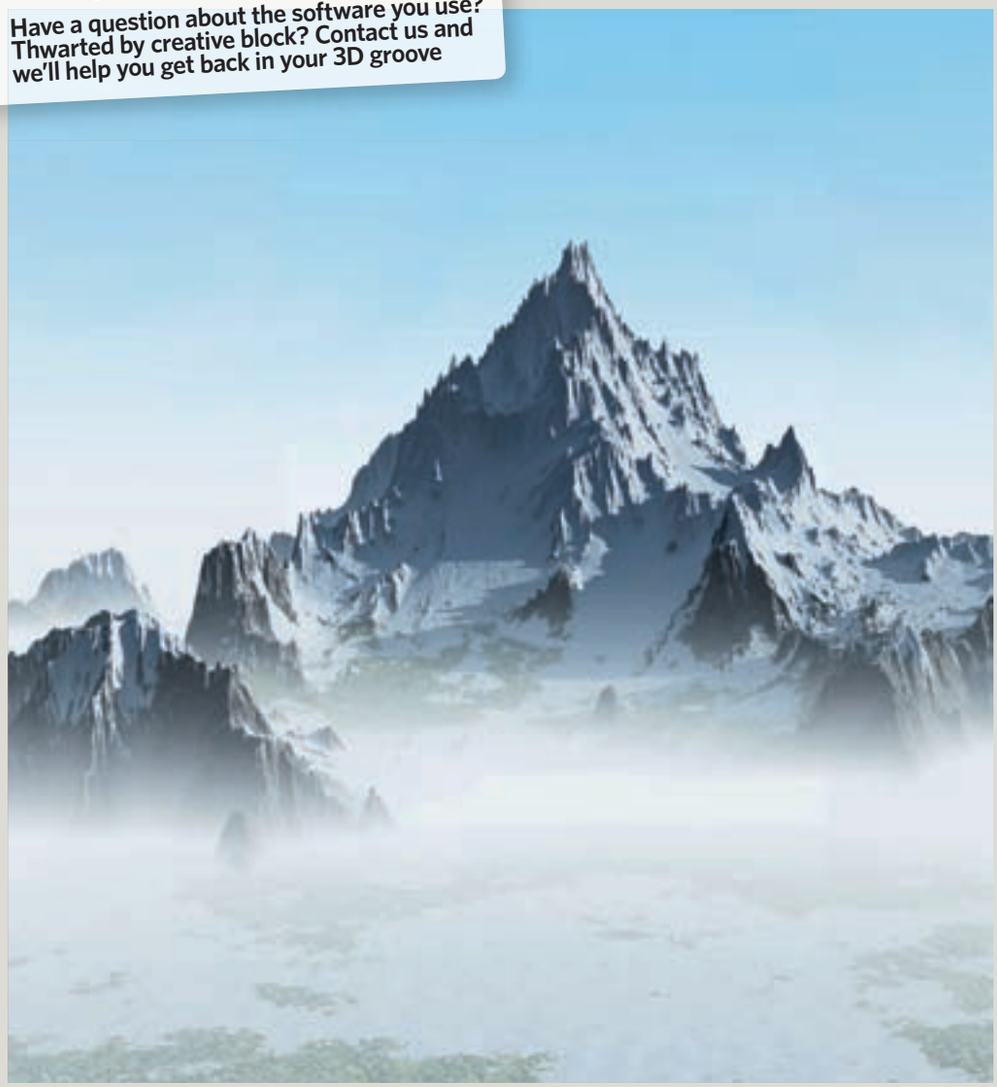


Foggy bottom

How do I create low-lying fog on my landscapes?

Fog and haze are extremely important in terms of fine-tuning the atmosphere, because they give an idea of distance. Nearly all the predefined atmospheres in Vue have an amount of fog and haze. In the standard atmosphere setting, fog acts in a way that masks the colour of an object. The farther away the object is, the more the colour will fade, leaving only the outline of the object's shape faintly visible.

There are two types of fog in Vue. The first is one that simulates the particles of dust and water in the air. This effect is controlled by the Density slider. The other type of fog is associated with weather or effects such as smoke. This is dependent on the Altitude and Falloff settings. Falloff controls the rate at which the fog fades away, as the altitude gets higher or lower. The fog profile display panel shows a horizontal line for the altitude of the fog and the vertical line for the thickness. Another powerful feature of the standard atmosphere is the use of the Sky tab. This controls the amount of fog colour in the sky at the horizon. By adjusting the Thickness to 100% and changing the Maximum Altitude slider, you can create a scene with no actual horizon.

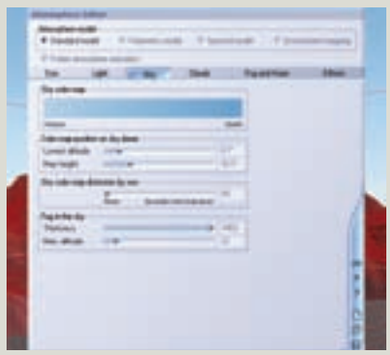
In a volumetric atmosphere, the settings are similar to the standard model but have a different outcome. The main thing you will notice using a volumetric atmosphere is that the sky colour is controlled by the Haze settings. Turn off all fog and then set your sky colour, then use the Haze Density slider to set the horizon colour and Haze Falloff to set the sky ramp. The fog colour is determined by the distance between the camera and object. The one thing a volumetric atmosphere can't do is create a low-lying or ground fog effect, which is what we are aiming to achieve in this tutorial.

01 Choose an atmosphere

For this tutorial, use the default atmosphere setting when Vue has loaded. Now change the atmosphere model at the top to Standard. This is important, as the fog and sky settings we are aiming for only really work in this model of atmosphere. The light and sun settings haven't been changed but can be if needed. The camera has been positioned at a height of 7.72m.

02 Fog and Haze settings

Now we need to change the fog settings. Click on the Fog and Haze tab and set Density to 258 and Falloff to 23%. Make sure the setting for The Fog Gathers is set to At Low Altitudes, and set Altitude to 80.8. You can reposition your object (in this case, the mountain) closer or further away from the camera to get more or less fog covering its lower altitude.



03 Fog In The Sky settings

Finally, select the Sky tab and move the Fog In The Sky Thickness to 100%. Set the Maximum Altitude to 22%. These settings change the amount of fog colour in the sky on the horizon and provide a powerful effect. It can also mean lower rendering times. Don't forget to experiment with the different sky colour maps to change the overall sky gradient.

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Let it all hang down

“How do I use cloth mechanics to get a draped cloth effect from clothing?”

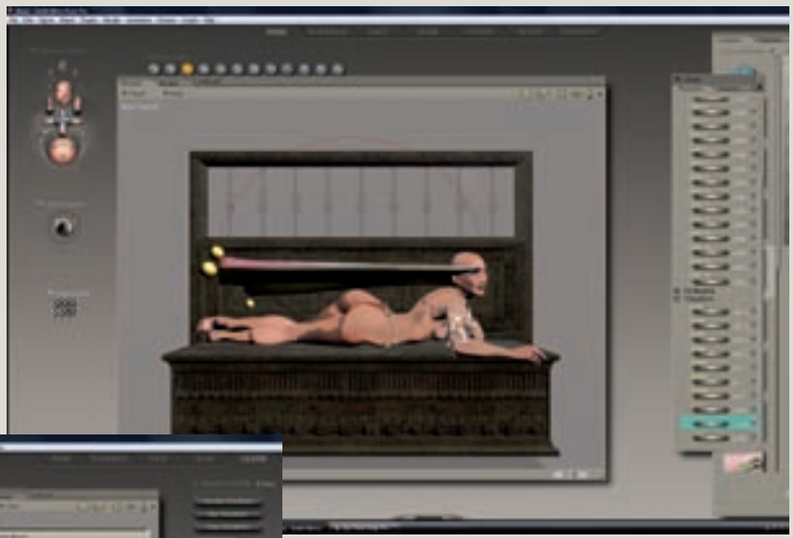
Having meddled with the Cloth Room several years ago, I haven't thought about it since, having mentally dismissed it as a bit of a gimmick with no practical use. However, I've now discovered how wrong I was! The first concept to get your head around is just how many variables you can apply, from wind effects to the shear and stretch characteristics of the individual material, plus gravity and a host of other options. The method of actually creating the effect of draped cloth is certainly unique; the individual item is identified as a dynamic cloth and then draped over the figures and items in your scene in the course of a miniature animation, which models the effects in real-time as you watch. You specify which items the cloth is to ignore, such as a character's head, and which to include, such as a seat, bench or table. You can simulate any kind of material you can envisage, with individual inputs for material thickness, how it bends, how it reacts to gravity, etc. I've titled the main image Albert Joseph Moore in honour of the Victorian painter who specialised in painting females draped in cloth.

Set up the cloth simulation

The first thing to do is identify the object you want to use in a cloth simulation. In this case I've jumped in at the deep end and used a ready-made cape, which has an inside and outside surface, and its own internal dynamics and magnets. Clicking the New Simulation button in the Cloth Room brings up a box with the name you want to give the simulation and various parameters governing the number of frames in the simulation and the number of steps per frame. I decided to keep the default settings of 30 frames, with two steps per frame.

Clothify and collision detection

The Clothify button is your next stop. This is where you identify the object you are going to use in the simulation, and where you tell Poser which objects you want it to interact with and which you want it to ignore. In this example, I have identified the female figure and the bench she is lying on as being collision objects, which will then be draped with the material. If you were modelling a tablecloth on a table, you would ignore the cutlery and items on the surface. If you get this wrong, your tablecloth will sink through the table before your very eyes.



I have used a ready-made cloak as the clothing item, and positioned it ready to be draped over Victoria

The Clothify option box, where you identify which objects the simulation treats as solid, plus other physical characteristics

The rendered version of the last frame; as you can see, Poser has made a pretty good job of it

Calculate simulation and generate draped cloth

The simulation shown in this example is a pretty straightforward one. Poser will happily mimic the effect of the cloth draping itself by gravity alone over the female figure, without you worrying about wind or any other effects. The simulation is started and Poser drapes the cloth over the figure, gradually dropping down frame by frame. I decided to stop this one early, as the effects of gravity meant that the cape began to slide off the figure and the bench – a bit too accurate, for modesty's sake! I also took the opportunity to try it again, this time using a primitive square plane, for the main rendered image on this page.

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Softimage's rendering is via mental ray, so its quality is right up there with the other professional packages

Autodesk Softimage 2010 $2,995 US

Christian Darkin checks out the latest version of the veteran 3D package, offering users new faces and faster characters

Softimage tends to get overshadowed by Maya and 3ds Max, and is often considered to be a bit niche. This is mainly because it's very good at character animation, particles and dynamics, and a lot of film studios use it for just those jobs.

This doesn't mean other features are lacking. Softimage has all the tools you'd expect from a professional 3D application, including strong modelling tools, powerful IK features, top-class animation and the mental ray renderer. It's very responsive, even on complex models and scenes, and the results it produces – if you know how to use it – are well up to the standards of Hollywood.

> "There clarity in the Softimage interface that its competitors tend to lose as they add features"

The interface is very well laid out, with plenty of space devoted to viewports. The tools, property displays and timelines are arranged around them in a format that will be instantly familiar, whatever package you happen to be used to using. However, there's an air of clarity in the Softimage interface that its competitors tend to lose as they add features.

The new version, Softimage 2010, introduces Gigacore 3 to the package. Gigacore is basically a coverall term Autodesk is using to describe a range of performance improvements focused on multicore processors. Gigacore 1 and 2 covered high poly count scenes and multicore ICE performance. Version 3 deals with character animation, making animation on scenes containing multiple-enveloped characters a lot more responsive. It also makes opening, saving and manipulation of large scenes much faster.

ICE, Softimage's highly respected node-based toolset for particle animation (and other animation), has been updated, adding performance profiling so you can find out what parts of your process tree are slowing things down. Wind has also been updated to make it more accurate, and particles can create more realistic motion blur. In addition, the ICE tree and the render tree views are better organised and easier to work with.

The big news for this version of Softimage is the inclusion of Face Robot – a set of tools for rigging facial animation. Put simply, Face robot works on muscles instead of face shapes, so instead of having to construct a smile by tweaking the positions of individual parts of the face, you can just pull the corners of the mouth and then the cheeks,

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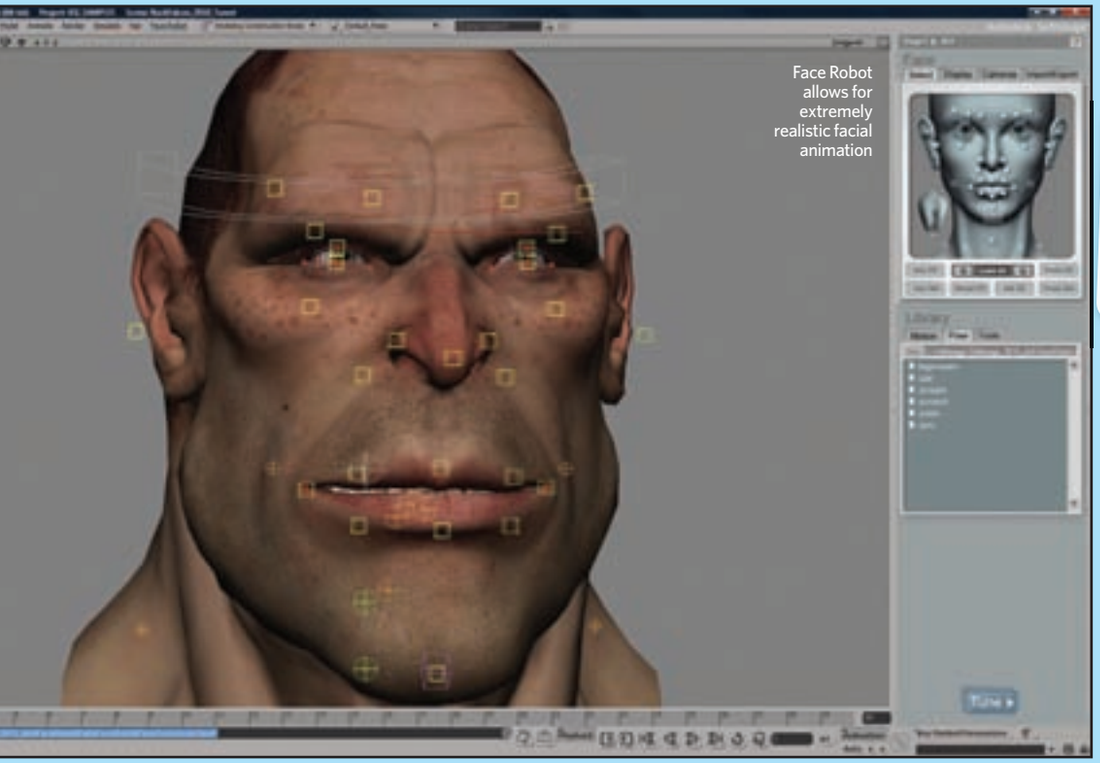
Face Robot allows for extremely realistic facial animation

The good & the bad

- ✓ Excellent modelling
- ✓ Strong general animation tools
- ✓ Face Robot is great
- ✗ Crosswalk could do with strengthening
- ✗ Expensive package

Essential info

www.autodesk.com
$2,995 US

OPERATING SYSTEMS
- Windows Vista Business, Windows XP Professional, Linux

OPTIMAL SYSTEM REQUIREMENTS (PC)
- 2GHz dual-core workstation
- 2GB RAM (4GB for 64-bit operating systems)
- Professional graphics card

Familiar interface
Softimage's layout is as clear as ever and is easy to pick up, whatever package you use

The joy of flowcharts
ICE is a flowchart-based system for handling complex automated animations

Updated animation
Character animation is one of Softimage's strong points and is streamlined to make things easier

eyes and nose will deform appropriately and realistically. You can also use motion capture to record real expressions for your characters. The results are beyond anything else on the market – as long as you've got a good, fairly humanoid model to work with.

Face Robot also includes an exporter for Maya, so you can create your animations in Softimage and bring them into Maya for compositing and rendering. Face Robot was originally a separate product and it hasn't yet been smoothly integrated into this version of Softimage (you have to switch into a special mode to use it). However, this doesn't affect the performance of what is an impressive and fun tool.

Softimage 2010 comes with the latest update of Crosswalk, helping you to move scenes between 3ds Max, Maya and Softimage. If you're trying to work on multiple packages or need to make use of different tools, it's a useful add-on. However, Crosswalk still has a long way to go. There's an awful lot of file elements that you can't take from one package to another, including lights and cameras, as well as more advanced features like bones and dynamics.

All in all Softimage 2010 is a significant update, particularly if you're a character animator. Face Robot is excellent and the speed enhancements for characters mean you'll finally be able to do those multiple character scenes without the computer slowing to a crawl.

Few animators will be switching from 3ds Max or Maya to Softimage, but those who can afford it may well consider adding it to their toolbox for particle and character animation. Which, if you think about it, is exactly what Autodesk would want.

Our verdict

Features	8/10
Ease of use	7/10
Quality of results	9/10
Value for money	7/10

"A good upgrade, but there's still room for development in ICE, Crosswalk and other areas"

Final Score 8/10

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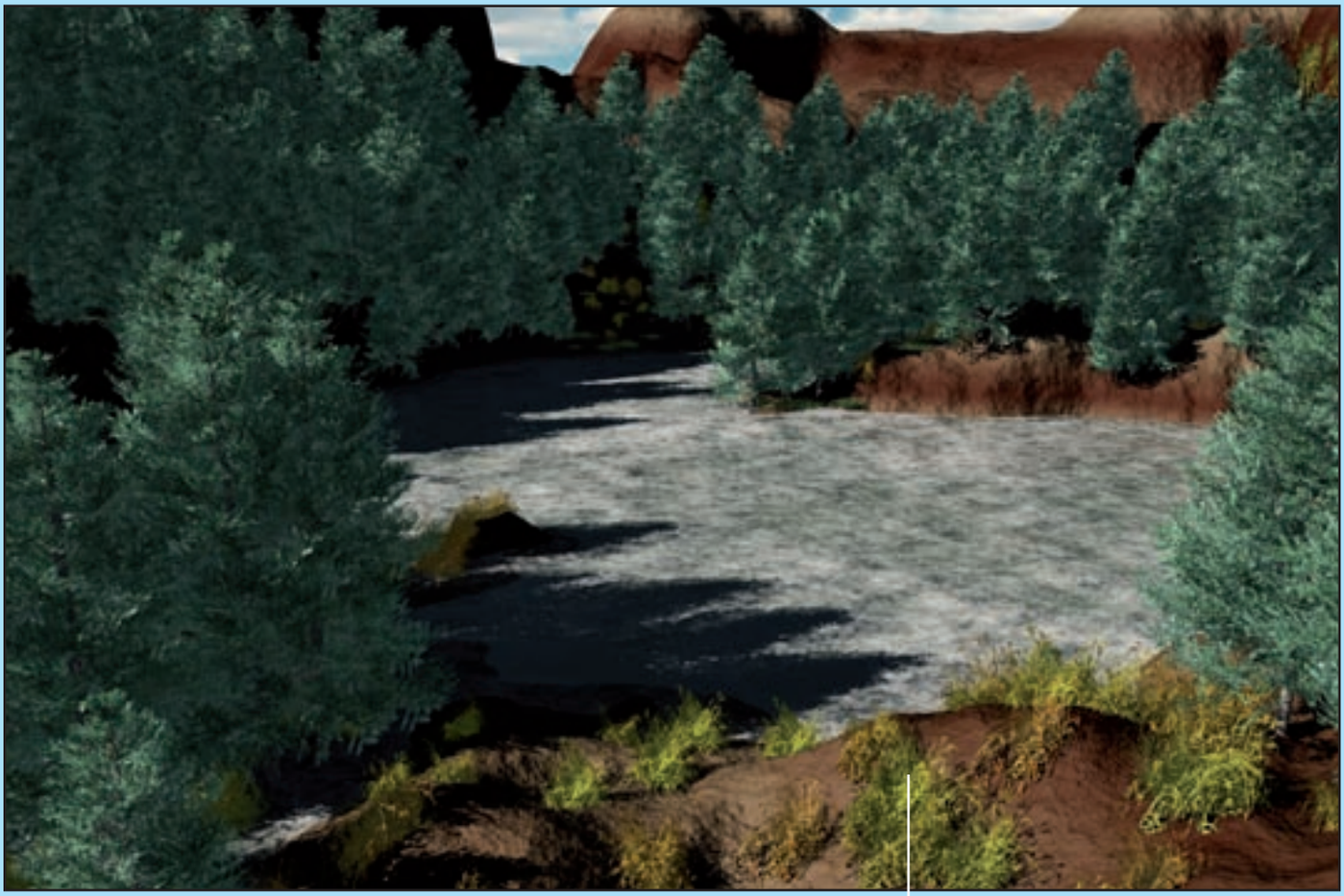

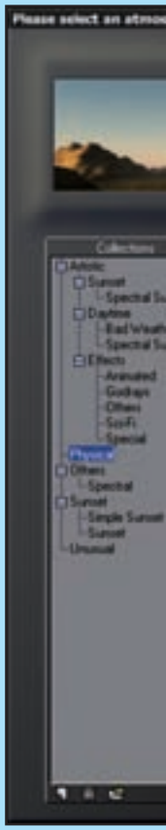

Here, we have a river running through a mountain pass. The Ecosystem painting puts variation into the tree orientation and size, even though there's only one model

Vue 8 $895US

In the world of CG scenery generation, there's one package to rule them all. Duncan Evans checks out the latest version

While there are inexpensive alternatives like Bryce or even freeware like Terragen, there's little doubt that e-on software's Vue rules the roost as far as CGI landscapes go. It has starter packages for the casual artist at $50/£37, yet adds functionality in increasing steps through the range of Frontier, Esprit, Studio and Complete up to Infinite/xStream for Hollywood studios with a premium maintenance contract at $2,290/£1,734. Vue was used to generate the lush jungles in the last Indiana Jones film, the terrain in *Australia* and the ruined cities in *Terminator Salvation*.

This close-up render shows some of the shortcomings of the Ecosystem when faced with the vertical walls that the sculpting can create

There was a modest update to Vue with version 7.5, which added planets, cloud maps and masks, infinite procedural terrains and an improved OpenGL display with real-time sunlight. If you didn't upgrade at the time, though, those features will be new along with the major features of version 8.

If there was one area of Vue that really wasn't that good, it was, perversely, the landscape editing. It was simplistic and limited. So here we go with Vue 8 and this is one of the areas to receive some attention. Now there are extra sculpting tools, with the options split into 3D and 2D tools. The 3D options are Sculpt, Freeform and Inflate for adding to the scenery, and an Invert checkbox for digging out material. What it means is that there is much more control over sculpting features into the landscape, and it makes it easy to produce overhanging ledges, caves or outcroppings of rock. As before, there are presets to modify the terrain into types of features, so this can be used first then the terrain map can be modified to suit. The other thing is that there are now infinite procedural terrains, which are ideal for animation as the scenery just keeps on coming. Terrain types can be mixed as well. Create a procedural terrain and then get to work by sculpting an area.

On the technical side, the Bump and Displacement channels are now separate

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There's one new class of sky generation, but the old favourites are still spectacular and the sun can be edited to change position and characteristics

The good & the bad

- ✓ New terrain sculpting
- ✓ Infinite procedural terrains
- ✓ Enhanced display options
- ✓ Dazzling sky and lighting
- ✓ Paint on Ecosystem
- ✓ Poser 8 import
- ✗ Control/view system not perfect
- ✗ Ecosystem is a little wayward
- ✗ Terrain sculpting could be better
- ✗ The close-up work isn't as precise or clever as it makes out

Essential info

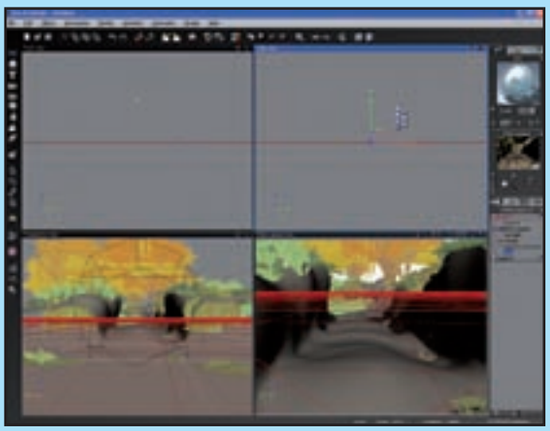
www.eonsoftware.com
$895

DOWNLOAD, NO CONTRACT VERSIONS:
- Vue 8 xStream – $1,495
- Vue 8 Infinite – $895
- Vue 8 Complete – $599
- Vue 8 Studio – $399
- Vue 8 Esprit – $199
- Vue 8 Frontier – $99
- Vue Science Fiction, Fantasy, Fairy Tale – $50

OPERATING SYSTEMS
- Windows XP, Vista, 7, Mac OS X

OPTIMAL SYSTEM REQUIREMENTS
- 2GHz multi-core CPU, 4GB ram, 256MB graphics card

Water planes are perhaps the most awkward things to line up, often appearing to be in different positions according to the different viewpoints



so that displacement depth and scale is now accessible from the Materials Editor. Also, RGB Normal maps are supported to use with the Bump channel, which can produce detailed surface features. Finally, there are strata terrain fractals, which are used to created highly detailed stratified rock formations.

The atmospheres have had more of a subtle upgrade. Vue 8 introduces Spectral 3 atmospheres, which improve the quality of cloud shadows and the God ray effects.

One area of contention has always been the interface with its strict four- or one-window display. This is still the same – you can change the window colours and double-click on the window title bar to maximise it and again to pull it back down, and all the windows can choose which viewpoint to actually use. However, you can't decide to use one main window and two others, for example. Additionally, the top, side and front views can only pan sideways or zoom in. They can't swivel – only the perspective view and, of course, the main camera can do that. If you have a good graphics card with lots of memory, then the actual display quality will go up as well, since a new shader-based OpenGL engine is used to give a much better shaded preview.

The Ecosystem engine has been tweaked so that objects can be restricted to certain rotations and set to paint at angles from the surface, which is handy for those new slopes you've made. You can also create it on separate layers and specify how they interact. It still isn't infallible, though, with vegetation appearing on the underside of the terrain at times.

There's more support for rigged meshes in terms of posing and animation, but this is limited to Vue's own format, Collada or using the MaxToVue exporter plug-in to export from Max directly into Vue. However, there is support for Poser content, as well as 3DS, DXF and OBJ files.

There's a host of performance tweaks that you won't really notice in practice, while there's some new content, largely to exploit some of the new terrain technologies used. This area is still too sparse, though, even in the top-end version of Vue, leaving e-on free to sell you extra content through Cornucopia, which links to the program in a seamless manner.

There's little doubt that Vue is the industry-leading application in this field, and e-on should definitely be congratulated for making it accessible to even the most cash-strapped artist at the entry level. We'd suggest you consider Vue 8 a modest upgrade rather than a compelling one, but it cements the role of Vue as the king of CG landscape generation.

Our verdict

Features	8/10
Ease of use	8/10
Quality of results	8/10
Value for money	8/10

> "The new 3D sculpting alone is reason enough to buy this version"

Final Score 8/10

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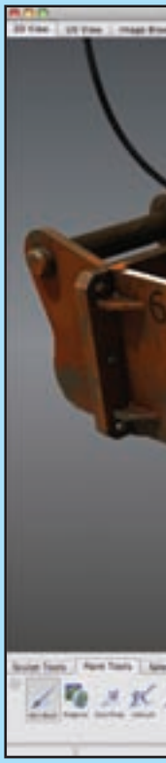
The good & the bad

- ✓ Ease of use
- ✓ Powerful 3D painting on multiple layers
- ✓ Workflow interoperability with Photoshop, 3ds Max, Maya and Softimage
- ✓ Software developer kit (SDK) to customise Mudbox and integrate it with production pipelines
- ✓ Digital sculpting and 3D painting in render view with real-time filter effects like Ambient Occlusion and depth of field
- ✗ Lack of base mesh creation capabilities
- ✗ Lack of posing features
- ✗ Limited selection of paint and sculpting brushes
- ✗ Price of subscription and upgrades

The easy-to-use interface and short learning curve will have you digitally sculpting and painting your model in no time (image by Ara Kermanikian)



Autodesk Mudbox 2010 £700 (£350 as upgrade)

Autodesk Mudbox 2010 gives 3D artists the freedom to create and paint high-definition digital characters, props and sets

As studios push the envelope to meet the demands of the modern audience, digital sculpting and 3D painting tools such as Mudbox and ZBrush are fast becoming a requirement in every visual effects production pipeline. Since its first release, Mudbox has stood out from the competition for its ease of use, advanced 3D painting capabilities and support of industry standards. Mudbox 2010 adds more interoperability with 3D software using Autodesk's FBX file-transfer technology and 2D image-editing and painting software through Adobe Photoshop's PSD output. It also now includes a C++ SDK for production teams to customise and integrate Mudbox into their pipelines.

Digital sculpting is pretty straightforward. Even with the limited number of tools, you have the ability to adjust properties and use stamps to create your own arsenal of personalised tools to address the majority of day-to-day digital sculpting needs. Although Mudbox 2010 does not add any new sculpting tools, it enhances some of the existing ones. The Wax tool, with the added Update Plane and Whole Stroke properties, has become a workhorse sculpting tool. When paired with a square stamp and minimal randomisation properties, the new Wax tool will allow you to push and pull shapes on your model's surface that look organic and have the feel of practical sculpting with clay. Also, extracting Normal, Displacement and now Ambient Occlusion maps to take your work into other 3D applications or game engines is as simple as filling out a dialog box in Mudbox 2010.

Where Mudbox really shines is in its layered 3D painting capabilities. It is easy to create multiple high-resolution Diffuse, Bump, Specular and Gloss Texture maps for your models and composite them using opacity and image order, while getting real-time feedback of your results in the 3D view.

Adding to the powerful Projection brush that lets you paint any 2D image right onto your model, the Clone brush allows you to paint areas on the model while sampling textures from other areas. Using the Projection and Clone brushes make visible hard seams in textures a thing of the past. The newly added Dry brush allows you to apply paint only to protruded or indented surfaces, which makes it very easy to create colour distinction on your model's surface based on depth detail. Mudbox 2010's new interoperability with Photoshop is also a huge benefit, as you can save your viewport image in any resolution as a PSD file and

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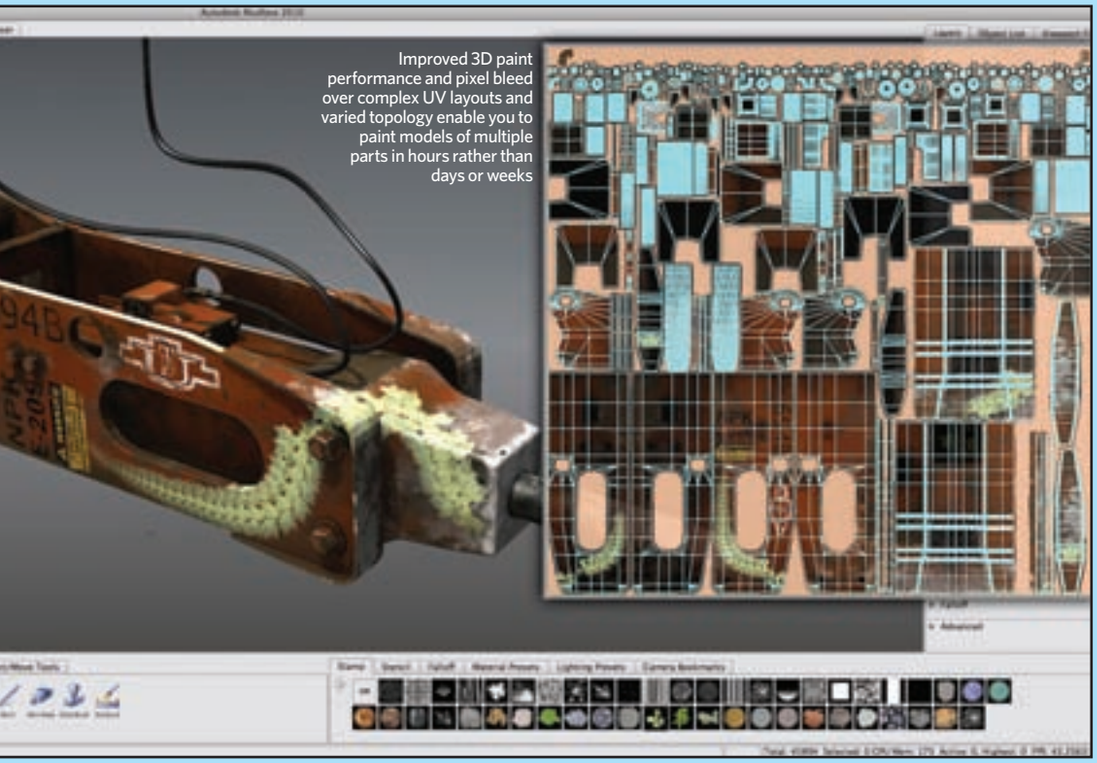


Improved 3D paint performance and pixel bleed over complex UV layouts and varied topology enable you to paint models of multiple parts in hours rather than days or weeks

Essential info

www.autodesk.com
£700 SRP (£350 upgrade from Mudbox 2009)
$745 SRP ($375 upgrade from Mudbox 2009)
€825 SRP (€425 upgrade from Mudbox 2009)

OPERATING SYSTEMS

- Microsoft Windows Vista Business (SP1) (32- and 64-bit)
- Microsoft Windows XP Professional (SP2) (32- and 64-bit)
- Apple Mac OS X 10.5.7

OPTIMAL SYSTEM REQUIREMENTS (PC)

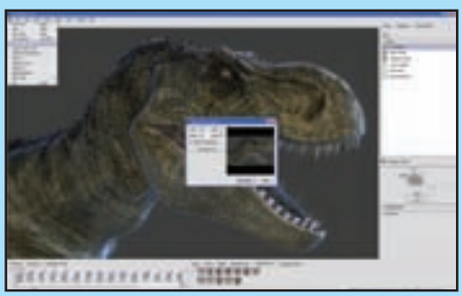
- 32-bit: Intel Pentium 4 or higher, AMD Athlon 64 or AMD Opteron processor
- 64-bit: Intel EM64T processor, AMD Athlon 64 or AMD Opteron
- 2GB RAM or more recommended
- 650MB free hard drive space (2GB recommended)
- Qualified hardware-accelerated OpenGL graphics card
- Three-button mouse or qualified graphics tablet

OPTIMAL SYSTEM REQUIREMENTS (MAC)

- Intel-based Mac computer
- 2GB RAM or more recommended
- 650MB free hard drive space (2GB recommended)
- Qualified hardware-accelerated OpenGL graphics card
- Three-button mouse or qualified graphics tablet

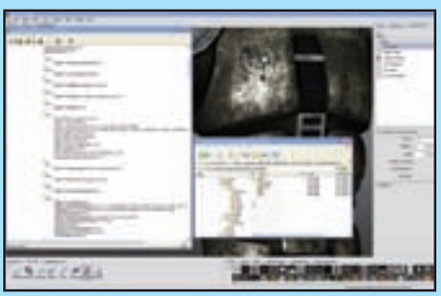
High-quality file format

The Autodesk FBX file format helps to transfer 3D scenes from 3ds Max, Maya and Softimage into Mudbox with more data than using the OBJ file format



Direct design access

The ability to render a scene directly from the Mudbox viewport in user-specified resolution gives artists faster access to high-quality images for design reviews



Time-saving tool

The new SDK enables studios to extend Mudbox into production pipelines and write custom Mudbox tools and plug-ins that automate time-consuming tasks

work on it with the rich selection of image-manipulation and painting tools in Photoshop, then simply reload that image to project the changes onto your model. This opens up the 3D painting capabilities of Mudbox to all the available image-manipulation tools and filters in Photoshop.

Another area where Mudbox shines is in rendering. Results from high dynamic range image-based lighting, Ambient Occlusion and depth of field are rendered in real-time while you are sculpting and painting your model. This makes it easy to replicate the environment of the final render that your model will end up in while you are sculpting or painting it. This will save you a lot of time by having less edit iterations, and it will open up new ways of visualising your output.

Interoperability is another major area of improvement in Mudbox 2010. FBX is now included as a format to import and export not only your model but also UV texture co-ordinates, selection sets, cameras and their associated image planes, blend shape morph targets, paint layers, shading material data and sculpt layers. This makes it easy to interact with other mainstream 3D applications, such as Maya, 3ds Max and Softimage.

The latest release of ZBrush (version 3.5) – with the addition of ZSketching, planar hard-surface brushes and surface noise capabilities compounded with the existing transpose, mesh extract and many other exclusive capabilities – make it a formidable competitor to Mudbox. However, even though Mudbox and ZBrush share similar capabilities, their exclusive yet indispensable feature sets warrant both of their inclusion in any respectable visual effects pipeline.

Our verdict

Features	8/10
Ease of use	10/10
Quality of results	10/10
Value for money	7/10

> With this version of Mudbox in their toolbox, 3D artists are limited only by their artistic vision

Final Score 9/10

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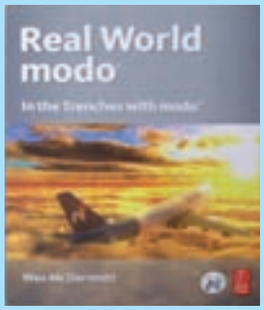
Real World modo: In the Trenches with modo £29.99

"We shall fight LightWave on the beaches..."



info

AUTHOR
● Wes McDermott

PRICE
● £29.99

PUBLISHER
● Focal Press

ISBN NUMBER
● 978-0-240-81199-4

Formed by a schism of LightWave developers, modo is the cool one; it's the brainchild of Luxology, which designed it to do a whole lot of good.

Many people think of modo as a 3D application but it also offers digital painting capabilities, and this is why it can be used to create some really fantastic effects. Unlike Maya and 3ds Max, which require you to learn their interfaces in detail because they have a tool for absolutely everything, modo has a fairly simplified toolkit, but the tools within it can be combined in a number of different ways using its Tool Pipe function. So when this book says it's called *Real World modo*, it really means it – there's no one right way to use modo, so finding out what settings professional users put together to create the effects they want is a real advantage, and not merely a bit of book cover spin.

Instead of the usual introduction to navigating the program, this book begins with some pertinent thoughts on what it means to be a 3D artist and the kind of things you have to consider in order to create effective artwork. Forget learning how to model Pixar's facial feature set; author Wes McDermott points out that the onus is on you to create unique and appealing artwork, and reminds you that what you're doing is a creative process and not just a technical one. Of course, being an officially endorsed book, much is made of modo's ability to enhance your innate creativity thanks to its feature set. You don't get to escape the program guide element entirely, but as it's been pushed back to the second chapter in favour of the creative emphasis the book feels more immersive when first approached, and by the time you get there you're pretty keen to learn how to use the Tool Pipe to your advantage.

The book's subtitle – *In the Trenches with modo* – is perhaps a hint at the battles 3D artists who are used to different programs may have with getting their heads and workflows around the program. Mapping, wrapping and texturing all work slightly differently to Maya, for example, and there's no doubt that this is a learning curve. This book should help you negotiate it.

MODELLING
Learn to model simple and more complex objects, like the human hand

PAINTING AND SCULPTING
Discover modo's painting palettes to create colour, shine and texture in your renders

USE WITH MAYA
Find out how you can combine modo with Maya to produce truly stunning effects

REAL-TIME ASSETS
Save time by creating reusable assets that can be skinned with a range of textures

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Learning 3ds Max 2010 Foundation for Games £45

Get to grips with 3ds Max game design

If you want to be a games designer, that's fine, but you've still got to learn to make the coloured box first. This book on using 3ds Max to design games may lure you in from the game design angle, but it's still a basic book on getting started. Blah blah interface; layout, box, sphere, blah. From this you can guess that it's aimed at newcomers to games design and is an inspirational start in working within the genre, but it doesn't lose its focus entirely. After working on basic shapes you'll move on to polygons, which – although less obvious these days – are still the building blocks of 3D games. While at this beginner's level you'll be learning to model basic blocky structures like an Atlantis-style city, the book is interspersed with examples of the kind of concept art that games designers work with and from every day to give you an idea of how much further you can progress.

APPROACHABLE PROJECTS
The logical organisation of approachable projects makes this book easy to work through

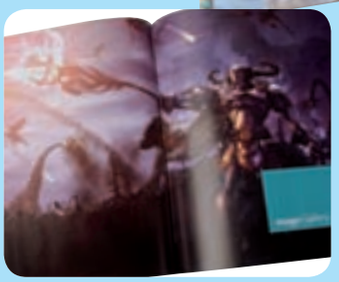


IMAGE GALLERY
An inspirational gallery shows you the kind of concept designs you would be working from

PAINTOVERS
Learn to improve the look of renders with a quick textural paintover

info

AUTHORS
- Donald Ott, Tyler Wanlass, Andy Livingston

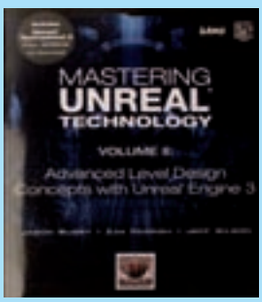
PRICE
- £45

PUBLISHER
- Focal Press

ISBN NUMBER
- 978-0-240-81194-9

Mastering Unreal Technology Volume II $59.99

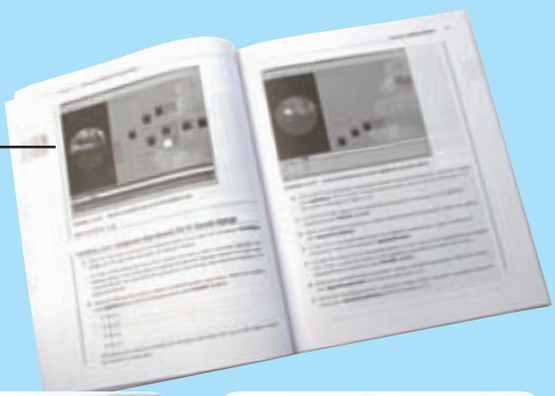
A dangerous book of game design for boys



Real men design games with the Unreal Engine – at least, that's what you would believe when looking at this hefty tutorial guide and comparing it next to the relatively light and fluffy *Foundation for Games*.

This is all about advanced techniques: realistic physics in complex situations, particles and trails, embedded sound effects within objects and superb cinematics. It's fully endorsed by Unreal developer Epic Games, and as a bonus you'll find some extra tutorials on working with the Engine on its website, as well as a free download of *Unreal Tournament 3* for you to pick apart piece by piece as you hone your level-design skills.

You will learn how to extrapolate the skills that you learnt in the first book and enhance them by exploring camera angles and other tricks for creating immersive action that will excite gamers and ensure they keep coming back for more.



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info

AUTHORS
- Jason Busby, Zak Parrish, Jeff Wilson

PRICE
- $59.99 US

PUBLISHER
- SAMS

ISBN NUMBER
- 978-0-672-32992-0

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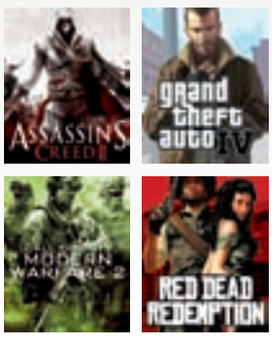

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Autodesk software in latest projects

The software enhances Astro Boy and Sesame Street Productions

A *Astro Boy* used Maya's paint effects in its creation alongside an in-house plug-in

B "Having relied on Maya for many years, we've seen great advancements in the software's capabilities. It continually helps us to deliver world-class animation, " says Johnny Mak, head of technical operations at Imagi Studios

C Imagi Studios, behind *Astro Boy*, achieved previous success with *TMNT* in 2007

D A series of 13 nine-minute CGI clips is the first digital outing for *Sesame Street*

Autodesk software has been hard at work on new industry productions for both the big and small screens.

First up, Maya has helped bring to life the iconic Japanese manga character *Astro Boy*. Recently released, *Astro Boy* was first created in the Fifties and tells the story of a permanently youthful robot boy, now making its cinematic debut.

The production of the feature film release involved more than 400 artists based in Hong Kong working on modelling, texturing, animation, lighting, rendering and compositing. Part of the workflow involved working with Autodesk's Maya. "We chose Autodesk Maya as our animation platform for *Astro Boy* because of its openness, creative tools and large pool of trained artists," says Francis Kao, founder and creative director of Imagi Studios, which is behind the release. "We relied on the software's powerful feature set and our programmers also developed custom plug-ins for Maya, which enabled us to efficiently create high-quality animation."

Autodesk software has also been helping out on a 3D animated series for *Sesame Street*, with Softimage software being utilised by SpeakeasyFX to create a CG series as part of the television programme for the first time.

As part of the programme's 40th anniversary season, the SpeakeasyFX animation studio created *Abby's Flying Fairy School*, a digital version of the Muppet fairy-in-training Abby Cadabby, consisting of 13 nine-minute segments. Up until now, *Sesame Street* has been using traditional hand Muppets without CG involvement. "We went the CG route with *Abby's Flying Fairy School* so that we could bring to life all the wonderful physical action our writers envisaged, such as underwater scenes," explains Carol-Lynn Parente, executive producer at Sesame Workshop. "The CG format allowed us to produce many online game options for SesameStreet.org, extending the broadcast experience."

SpeakeasyFX used Softimage to model, animate, render and composite the CGI series, using its Interactive Creative Environment to generate fantastic magic effects.

> "The feature film release involved over 400 artists"

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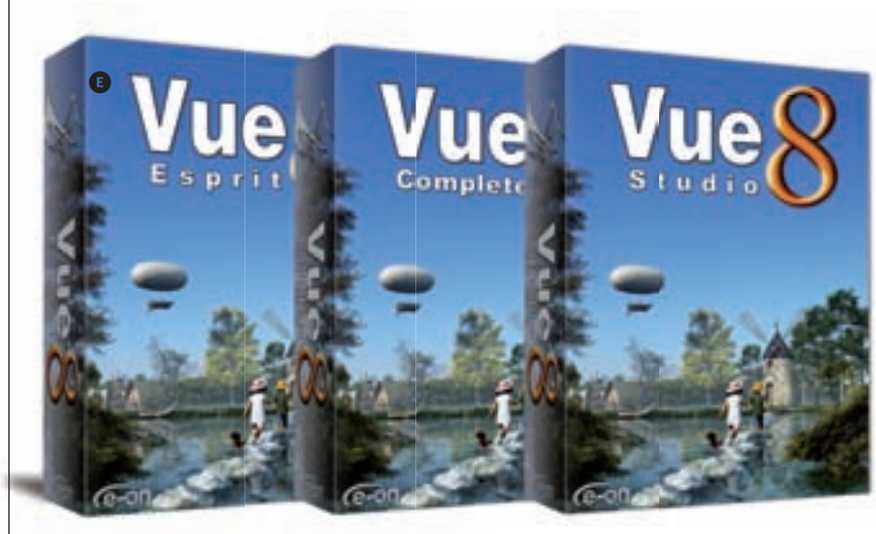
Vue 8 – full product line

The popular industry-standard 3D environment generator shipped



E The full Vue 8 product line, aimed at everyone from 3D enthusiasts to industry professionals, is shipping now

e-on software has announced that the new Vue 8 product line for 3D enthusiasts and professionals is shipping. Following on from the announcement of Vue 8 Digital Nature solutions, the full line of Vue 8 products are officially available.

The product range caters for the full breadth of 3D artists at all levels. For enthusiasts, Vue 8 Pioneer and Theme-Packs and Vue 8 Frontier offer easy-to-use scene creation for home users. The entry-level Pioneer is available for free as an introduction to 3D natural environment generation, and can be upgraded through 12 optional modules as the user progresses. Vue Theme-Packs are themed sets of 3D images and video clips. Split into Science Fiction, Fairy Tale and Fantasy, the packs retail at $49.95 with a value of over $100. Frontier ($99) is aimed at Poser users and comes with a free version of SkinVue 8 to enhance skin realism.

Moving up the ladder, Vue 8 Esprit ($199), Studio ($399) and Complete ($599) are more powerful applications to create 3D scenery and landscapes. Esprit offers advanced scenery control features, Studio adds powerful vegetation and rendering features, while Complete lets 3D artists control rich ecosystems.

Industry professionals benefit from Vue 8 Infinite, xStream and Ozone 4.0. Previous versions of these products have been used in films, such as *Terminator Salvation* and *Australia*.

Trial versions of some of these products, as well as a comparison chart and full price list with details of upgrades, can be found at www.e-onsoftware.com.

> “Professionals benefit from Vue 8 Infinite, xStream and Ozone 4.0. Previous versions of these products have been used in such films as *Terminator Salvation* and *Australia*”

Cinematic effects in WET videogame

Animation services provided by VICON House of Moves

VICON House of Moves, supplier of 3D animation services for the entertainment industry, has unveiled its involvement in a new videogame, *WET*.

WET, published by Bethesda Softworks and developed by Artificial Mind and Movement, is a third-person shooter acclaimed for its highly cinematic finish. VICON House of Moves (www.moves.com), which has previously worked on videogames *Resistance 2* and *Unchartered*, as well as films *Spider-Man 2* and *Titanic*, were brought on board to animate the final battle as well as other fight sequences.

The process involved days of motion capture, including working with a weapons specialist to perform sword skills. These were translated by the animation team and converted into 3D character and weapon models.

Find out more about the game at http://wetthegame.com/.

All-level video training for modo 401

Luxology launches latest training solution

Luxology has announced a new video series aimed at both beginner and experienced 3D artists to get to grips with modo 401.

The in-depth training is created by Luxology's Training division manager Andy Brown and it runs for three parts. It focuses on the creation of a bee, walking through modelling, rigging, animation, texturing and rendering for a complete overview of the modo 401 toolset. As an added bonus, the video series comes with a 30-day trial of modo 401 so that viewers can try out the training.

The video series is available now for $25 from the Luxology website at www.luxology.com.

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Studio Access

Assassin's Creed II

Duncan Evans tracks down the studio behind the spectacular visuals of 15th Century Venice in *Assassin's Creed II*

Ubisoft Montreal is the world's second largest videogame development studio. Founded in 1997, today it employs some 1,700 creators. It has made its mark thanks to the talent and drive of its employees as well as its business development vision

http://assassinscreed.fr.ubi.com/assassins-creed-2/

Project *Assassin's Creed 2*
Description The vision for *Assassin's Creed 2* is to build on all the strengths that made the first *Assassin's Creed* such a great experience – free running, crowd life, interactions, Master Assassin, combat, etc – and to improve all of these aspects, giving players more possibilitise and variety
Country Canada
Publisher Ubisoft

Key people

Sebastien Puel
Producer

Patrice Desilets
Creative director

Geneviève Dufour
Production manager (World)

Mohamed Gambouz
Art director

The original *Assassin's Creed* on the next-gen consoles and PC formats was a runaway success thanks to its combination of intricate detail, busy crowd scenes and jaw-dropping vistas. Few games can claim to produce a sense of vertigo, but *AC* managed that in spades. Given the success of the game (and also the fact that there were a few shortcomings) a sequel was never in doubt, so publisher Ubisoft turned to the studio that had developed the game in the first place: Ubisoft Montreal. The studio had previously worked on a raft of grade-A titles so the franchise was in good hands.

The sequel was brought forward through the ages to the time of Renaissance Venice. The core team, management and directors had the chance to visit major cities in Italy where *AC2* took place (including Venice, Florence and Rome). They visited major landmarks and walked in the streets, too. This way, they got a real feeling on how people live over there today, but also how they could live back in the 15th Century. They took more than 35,000 pictures and built a huge reference bank used during the production. The team also collaborated over several months with a historian of architecture specialising in Italian Renaissance. This helped to get more accurate information on how cities were built during that specific time in Italy. It didn't end there, though, as Geneviève Dufour, production manager (World) for Ubisoft, explains: "We found and used maps from the 15th Century from each city, as well as drawings, paintings and sketches by the most influential people at that time. For example, to represent the city of

> "They took more than 35,000 pictures and built a huge reference bank used during the production"

A

Venice, the paintings of Canaletto really inspired us; the same goes for Florence with Brunelleschi's drawings. Also, let's not forget the experience that some people had on the team concerning architecture in general, either from Italy or other countries around the world. All this knowledge from the team really helped us a lot when we built the cities in the game. This knowledge was really important to us to give the player real and credible visuals."

The team were duly inspired and became very passionate about their work, mainly on the landmarks. They took time to make them the way they looked in the 15th Century in Italy. Where reference materials and historical documents were lacking, though, they filled in the gaps by imagining what certain features should look like. Dufour sums it up, as he says: "Our goal was not to represent each city perfectly, but to build them in the most accurate

portfolio highlights

These are just some of the many titles that Ubisoft has worked on in recent years

2009 *James Cameron's Avatar: The Game*, PS3, X360, PC, Wii
2009 *Assassin's Creed II*, PS3, X360, PC
2008 *Shaun White Snowboarding*, DS, PS2, PSP, PS3, X360, PC
2008 *FarCry 2*, PS3, X360, PC
2008 *Rainbow Six - Vegas 2*, PS3, X360, PC
2007 *Assassin's Creed*, DS, PS3, X360, PC
2007 *TMNT*, GBA, GC, DS, Wii, PS2, PSP, X360, PC
2006 *Rainbow Six – Vegas*, PSP, PS3, X360, PC
2006 *FarCry Instincts – Predator*, X360
2006 *FarCry Instincts – Evolution*, Xbox
2005 *King Kong*, GC, DS, PS2, PSP, Xbox, X360, PC
2005 *Splinter Cell - Chaos Theory*, GC, PS2, Xbox, PC
2004 *Star Wars Trilogy - Apprentice of the Force*, GBA
2003 *Rainbow Six 3: Raven Shield*, PC
2002 *Splinter Cell*, Xbox
2001 *Myst III: Exile*, PC
2001 *Rainbow Six – Rogue Spear*, PC
2001 *Batman – Vengeance*, GBA, GC, PS2, Xbox, GBC

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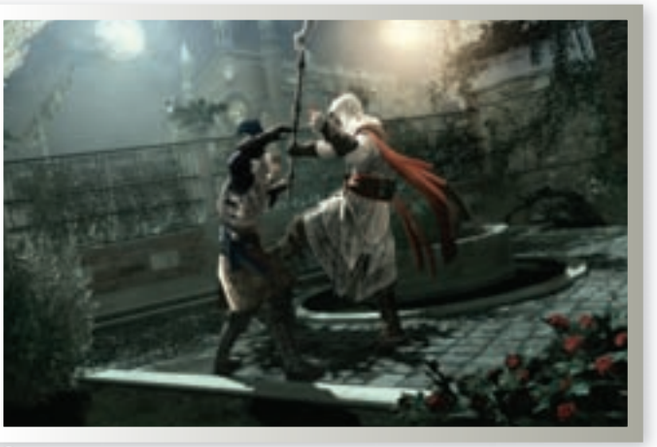

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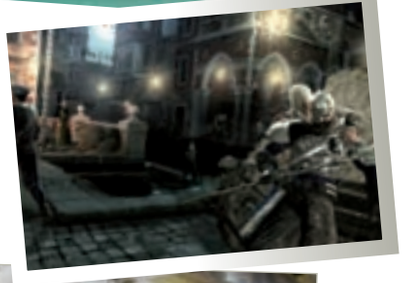

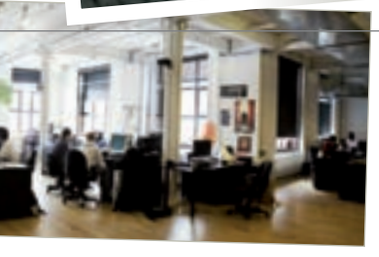

way possible. I think we did a really good job and we can be proud of what we've created."

What interests 3D Artist, of course, is how they went about making the amazing Venice visuals. We asked Danny Oros, technical director (Model) at Ubisoft Entertainment, what software packages they used to create the characters and also the textures for the characters and buildings. "For characters, textures are baked from high-resolution meshes modelled under Pixologic's ZBrush by our character artists. The baking process (under Autodesk 3ds Max 2008) allows us to render onto the game resolution meshes the Diffuse, Specular, Normal, blending masks and other textures from the high-resolution source mesh." And the architecture, all those buildings? Oros came clean, as he says: "For the architecture, a large amount of textures came from photographic references, which is manually cleaned, tiled, detailed, etc, in Photoshop by our texture artists to create Diffuse maps. The Normal map creation process typically begins with a straight Diffuse to Height map (greyscale) conversion, then imported into ZBrush for cleaning and painting. This offers the best results, although it requires more time and effort than any of the automatic conversion applications we have tested. Specular maps, masks and such are created within Photoshop CS3."

One of the things that was notable about the first game was the fluid cloth animation on the characters' outfits. The sequel expanded this even more, as Francois Levesque, technical director (Animation), explains: "We have a lot of characters with complex costumes, featuring skirts, capes, long sleeves, armour and hair that can even be randomised. They must be detailed enough for cut-scenes while remaining efficient enough for large crowds. For this

A Welcome to Venice Enzio. The team at Ubisoft underook extensive research into the architecture and lifestyle of people at the time to give the game an authentic feeling

B The characters were modelled in ZBrush by Ubisoft's character artists before being baked using 3ds Max so they could be rendered at a resolution suitable for the game animation

C For the cut scenes the team used actors to create the key moments which were recorded with motion capture technology before being imported into the game

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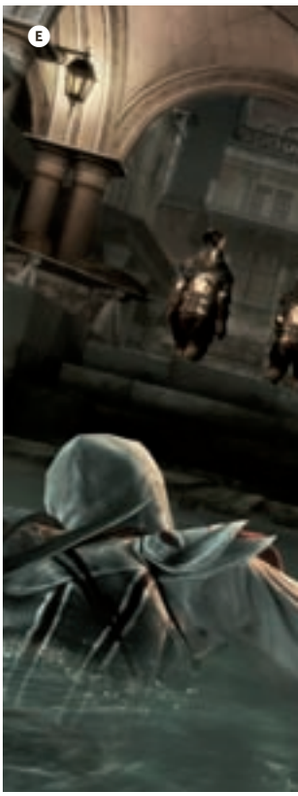
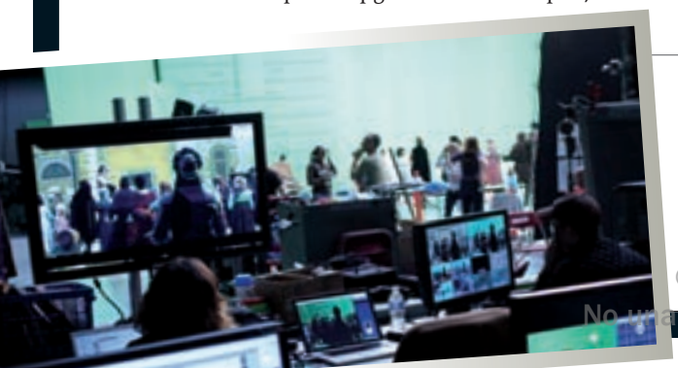
> The graphics in AC2 were stepped up on a technical standpoint to respond to art direction and game design wishes from the onset



we have developed a dynamic rigging system; the engine is able to glue pieces of skeletons together based on what the character ends up wearing when the dice are rolled. This way, every character is as efficient as possible. It is also better for production, since we can concentrate on a smaller number of simple skeleton add-ons rather than having to maintain hundreds of full-body skeletons. Bones are deactivated automatically by the engine when meshes stop using them, so multiple characters can share the same skeleton while having vastly different LOD data."

With such an organic world going on right in front of the player, careful attention needed to be paid to the animation of the minor characters and artifacts that were animated. The team managed this by making sure everything that wasn't part of a basic human had to be animated automatically by the game engine in real-time. They used simple maths to control things in order to maintain a good frame rate, and this also freed them from a lot of other issues. For example, the team could can change or add rigs at any time without affecting other people's work.

It will come as no surprise to learn that the original game used its own custom-developed engine, and that has been kept but upgraded for the sequel, as Oros explains: "The engine used for *AC2* is an evolved version of the *AC1* engine: Scimitar. A slew of new features and systems were implemented, allowing us to achieve our objectives (design, gameplay, audio, graphics, etc)." That wasn't the end of it, though; we wanted to know how much more detail was possible to pack in and how close to having frame rate issues the team came. Oros came clean, as he revealed: "The graphics in *AC2* were stepped up on a technical standpoint to respond to art direction and game design wishes from the onset. For example, we knew we couldn't do Venice without decent dynamic water rendering and reflections, so we invested a significant portion of development time to implement and optimise real-time reflections for our large cities. Rendering free-roaming, long-range city vistas with crowds in such detail within a fixed frame rate is often a daunting task – rendering it a second time over for dynamic reflections without excessive cost required much perseverance, effort and rendering cost balancing. The same could be said for our dynamic 24-hour time-of-day system, lighting system, new Shaders, etc. We also added more postprocessing effects, including a flexible depth-of-field system permitting flexible use by art direction, cinematics and certain gameplay



D Almost every aspect of character generation was improved from the first game, including detail levels and animation of the clothing which had to work in the action sequences

E Unlike the original game where water was a death warrant, in this game the designers wanted to have Enzio splashing around in the various watery locations

F All the signature graphical features of the first game are there, along with new effects. You can look forward to crowds of people, detailed architecture and stunning vista views

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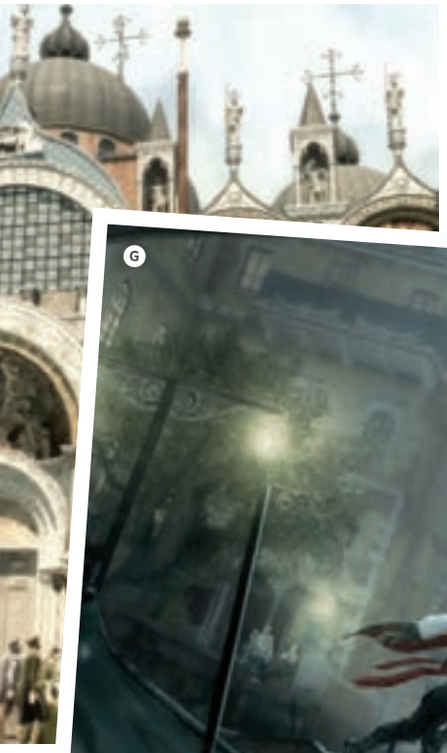

sequences for a softer cinematic feel, all the while keeping rendering costs systematically uniform across the game universe.

"On the art content creation side of things, great effort was placed into our asset development over even *AC1*. Higher-resolution textures, more ambitious architectural elements with rich decorative details, more variety in characters and their richness, the characters' complex and rich clothing – the list goes on! Nearly everything produced was pushed up a few notches from *AC1* in terms of quality. Where more quantity was required for gameplay purposes, quality was balanced to make it all cohesive. Overall, we performed a lot of balancing between all of these elements and features versus their impacts on frame rate in our large worlds – we believe we did well within the time scope of the project."

Are you impressed yet? Well, there's more. The original game had pretty detailed characters, so what were they going to do with the sequel?

"Renaissance clothing tends to be more detailed than medieval clothing, so this was part of our artistic direction. From a technical point of view, we increased our vertex budget and added tiling diffuse textures, but overall we used fewer textures than we did in *AC1*," Oros explained.

Ah, but what about the water? Venice is full of it and this time the assassin, Ezio, can go swimming in it. Had it been upgraded in terms of interaction and the look and feel of it? "In *AC1*, the water shading was simple in that it did not dynamically reflect anything, and since Altair could not swim, a lot of simplifications were made to keep the frame rate up. In *AC2*, Ezio not only had to swim but had to look good doing so in the thick of Venice, with its entire environment detail, etc. We wrote new tech (dynamic reflections, new shaders and such) that together allowed for richer and more dynamic water rendering than the previous *Assassin's Creed* game. We also knew from the start that Ezio would not go underwater, from a technical and gameplay standpoint. That actually helped us out a lot and simplified many things for us. The new water rendering can now have depth, reflect the environment and characters, behave accordingly to time-of-day changes, etc," Oros revealed.

"It's not just all fancy new tech, though; there's other things in the game that draw upon designs actually made in the 15th Century. Leonardo da Vinci's flying machine, for example. The structure of this is well documented and information about it was easy to find. In this way, it was possible to rebuild the structure in 3D. Ubisoft's research didn't manage to unearth shocking evidence that the flying machine really flew in the sky of Florence in the 15th Century, but they put it into the game anyway."

The game was developed for both consoles with a fixed hardware platform and the PC, which is a visually scalable platform. Instead of adding more detail, the team made the game scalable for the PC downwards, the theory being that you would need a high-end PC to run it with all the trimmings in the first place. One of the options was to enable/disable shadows, while being a good optimisation for lower-end PCs was also pretty useful for debugging purposes.

Our thanks to Ubisoft Montreal. *Assassin's Creed II* is available on the Xbox 360, PS3 and PC.

G Enzio has no fear of water in the sequel but the team made the decision early on that he wouldn't be able to swim under it which helped the game engine

H Expect to do the usual running around rooftops. Lower spec PCs will be able to turn shadows and other details off to keep the frame rate up

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Industry insider

Dennis Allain

Architect/illustrator

Each issue, 3D Artist finds out how the top people in the 3D industry got their jobs and what you need to know to get a foot in the door

About the insider

Job Architect/illustrator

Education Associate's degree in Architectural Engineering from the Wentworth Institute. Bachelor's degree in Architecture from the Wentworth Institute

Website www.dennisallain.com

Biography Dennis Allain attended the Wentworth Institute of Technology in Boston. By 1990, he had earned both his Associate's degree in Engineering and a Bachelor's degree in Architecture. Upon graduating, Allain had found employment with several Boston-based architectural and interior design firms. His longest tenure was with Elkus Manfredi Architects Ltd from 1995 through 2005. As a designer and eventually a registered architect (2000), Allain's passion for art and design has always been a focus in his professional life. It was this passion that eventually led to the creation of his design studio in 2004

Dennis Allain is an illustrator and designer who is commissioned by clients to augment their in-house design capabilities and provide illustrative content for their projects. On a typical day, Allain is in constant contact with his clients via phone or email, reviewing project information and learning what their goals are. He then translates their ideas, first in 3D with CINEMA 4D and then into a finalised 2D illustration, which gives the finished artwork a unique blend of 3D geometry and watercolour-style illustration. Part of his passion for architecture comes from studying the subject at the Societa Dante Alighieri when he was living in Venice, Italy in the autumn of 1990.

3D Artist: *For today's generation of students, what is the kind of educational grounding they should be looking to undertake to get a first job in architecture and design?*

Dennis Allain: Obtaining a degree in Architecture has proven to be an invaluable asset. It allowed me to work at an architectural firm and be totally immersed in a creative profession that I would go on to later service. Knowing what your client's needs are has helped my design, rendering and marketing.

3DA: *What is your current or most recent role and how did you get it?*

DA: Currently, I am creating some illustrations for an international competition in South Korea. I am supplying a small amount of design for this particular project. The majority of my involvement is to collect all the design directions from several consultants on the project and bring all the ideas together in one evocative series of renderings.

3DA: *What software and tools do you use?*

DA: My hardware configuration is a BOXX W8400, Dual Quad Intel Xeon 2.5GHz, Windows Vista 64, NVIDIA Quadro FX 3700 graphics card, Wacom Intuos 6 x 8 graphics tablet and an Epson 2200. The software I use is CINEMA 4D r11.5 and Photoshop CS4.

3DA: *Do you think there is a shortage of skilled digital artists doing architectural visualisation?*

DA: I have to say no. It seems that every day I am on the internet, I see so many illustrators out there doing amazing work. It is quite intimidating that there is a tremendous amount of talent out there.

3DA: *What are the key skills required to work as a 2D/3D illustrator?*

DA: An eye for detail. Being able to look around you in the real world, understand what you are seeing and translating that into an image or series of images/paintings. Being a good storyteller is also very important.

3DA: *What's your working philosophy when creating your images?*

DA: I am always trying to do my best in all aspects of my life. Every time I work on something I try to make that the bare minimum standard. In terms of illustration, I use this simple approach to try and push myself into getting a little bit better every time I pick up a stylus pen. I also try not to get too hung up on overly specific details. In the 3D world, you can

Jaipur Aerial
CINEMA 4D and Photoshop – 2008

Portfolio highlights

Allain has had commissions from a lot of big companies, including:

Hasbro
Disney
Universal Studios
Banana Republic
Paul Fireman (Reebok founder)
Lego
HMV

Caruso Affiliated
Elkus Manfredi Architects Ltd
ESPN

Cairo Fountain View: C4D, PS - 2008

Retail Ferris Wheel: C4D, PS - 2008

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> Star Wars was probably the single most influential movie in my life in terms of opening up my imagination

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easily get bogged down in stochastic models, IRC, photon mapping or subsurface scattering. My work tries to balance the capabilities of a 3D program while at the same time maintaining a more natural or poetic look and feel. I let emotion drive my work, not technical phenomena.

3DA: *What can you tell us about your personal artwork that features sea monsters and ships from bygone eras?*
DA: Growing up, all the kids in the neighbourhood would get together after school and on weekends to draw our own comic-book heroes and play tons of role-playing games like Melee, Wizard and Panzer Leader. Along with comic-book collecting and model building, we were always going to the movies. *Star Wars* was probably the single most influential movie in my life in terms of opening up my imagination. The movie was unlike anything I had ever seen, and around that time movies and shows like *Battlestar Galactica*, *Space 1999*, *Jonny Quest* and *Outer Limits* were also great sources of inspiration. One show in particular was *Creature Double Feature*. Every Saturday at 1pm, Channel 56 would air two horror/sci-fi shows from the Thirties to the early Seventies. *Creature from the Black Lagoon*, *Plan 9 from Outer Space*, *Godzilla* and countless Béla Lugosi movies made their way into my head.

All these influences from my younger days have continued to fascinate me. Today, I occasionally indulge my creative side by illustrating subject matter that attempts to capture that same sense of wonder I had as a kid.

3DA: *Professionally, what's the most satisfying project you've worked on and why?*
DA: Perhaps the most satisfying project I worked on was *Arthur V. McCarthy Memorial*. It was inspired by my late father-in-law. He fought in WWII and, upon returning home, founded his own commercial art practice. His work ethic and talent was inspiring to me. I therefore wanted to create a war memorial design as an illustration in his honour. The rendering I did for the imaginary design was later selected for the Hugh Ferriss Memorial Prize in 2006.

3DA: *What would be your dream project to work on?*
DA: It would be great to collaborate with a design studio on some previsualisation work for the film or the videogame industry.

Beuagrenelle Tower Study
designed/illustrated while at Elkus Manfredi, CINEMA 4D and Photoshop – 2003

A *Fish Feeder:* robot study, CINEMA 4D and Photoshop - 2003

B *The Devil's Cauldron of the Hoodoo Sea:* steampunk competition, CINEMA 4D and Photoshop - 2009

C *Abu Dhabi Marina View:* CINEMA 4D and Photoshop - 2007

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The best course and freshest talent from universities around the globe...

Glyndwr University

Head to glorious Wales to receive top training and bright prospects in animation

If you love the thought of taking your ideas from script to screen, then be sure to consider the Animation course at Glyndwr University. Based in Wrexham, Wales, this relatively new university offers top-notch tuition in the field of design and particularly animation.

The Animation course at Glyndwr offers a fantastic step on the ladder when it comes to obtaining relevant, usable skills. You will learn all the pivotal aspects of animation production, focusing on key processes. You will cover 2D drawn, 3D stop motion and 3D computer animation techniques, plus scriptwriting and character development, too.

Glyndwr University is well linked with industry professionals, which gives students the best possible opportunities to get a foot on the animation ladder. Your tutors have great links to industry professionals and are on hand to help you liaise with them for work experience. There is also an emphasis on external learning outside of the confines of the university, with study trips to animation festivals such as the International Animation Festival and even trips to top animation production companies. The course also regularly invites top guest speakers to lecture as well as to hold workshops in order to give students a real insight into the working world of animation.

> We use the full range of animation techniques from script to screen at Glyndwr University. Our links with industry make this a strong vocational course with opportunities to visit companies and major animation festivals worldwide

Marisse Mari, principal lecturer in Design Communication

The course is part of a Design suite of degrees, which provides students with the opportunity to work collaboratively with other students studying courses such as Illustration and Sound Design.

The Animation course kicks off with an introduction to storyboarding, animation principles and film language. Professional development is nurtured through a variety of studio workshops and theme-based assignments help improve and challenge students. Character development and the principles of storytelling are essential in order to produce a strong body of work. The end goal is for students to have a strong portfolio of work as well as a showreel, which will be essential for breaking into the industry. Students are assessed throughout the course through a series of critiques, tutorials and seminars.

The BA (Hons) Animation course boasts a phenomenal success rate when it comes to graduates entering employment or further studies.

Within just six months of completing their studies, 100 per cent of students are in jobs or studying.

Employability is a key aim for Glyndwr University, and the Animation course is no exception. If you're looking for a course to empower you with prospects, then head to www.glyndwr.ac.uk to check it out.

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PRIFYSGOL GLYNDŴR WRECSAM
GLYNDŴR UNIVERSITY WREXHAM

Course details

Name BA (Hons) Design: Animation
Length Three years (full time), five years (part time)
Duration Three years (part-time route available)
Fees £3,225 UK, £7,300 international
ENTRY REQUIREMENTS
200 UCAS points in relevant A-level subjects or equivalent
A portfolio of work is required
Art and Design and English A-level subjects are preferred

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A Hoov
» **Chris McNeill – BA (Hons) Design: Animation**
Time taken: Six months
Maya
"Hoov, an enthusiastic vacuum cleaner, endeavours to clean up a room full of paperwork with disastrous consequences."

B War & Piece
» **Ian Young – BA (Hons) Design: Animation**
Time taken: Seven months
Maya
"The message behind my film draws on the comparisons between a game of chess and two countries at war as the battle between them unfolds in parallel edit. It incorporates mixed media of 3D animation and live action. The chess pieces are modelled on battle machines."

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Uni focus

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C Natural Selection

» **Jesus Pantaleon Gomez – BA (Hons) Design: Animation**
Time taken: Seven months
Maya
"Set in the future, machines have survived but against all odds one of them believes there is more to life and saves a plant life from distinction."

D Love in a Canvas

» **Maria Pedrosa Lojo – BA (Hons) Design: Animation**
Time taken: Seven months
Maya
"An artist's mannequin falls in love with the portrait of a lady he is painting and the only way to reach her is to become part of the picture."

E Pigeon Pie

» **Simon Davies – MA Animation**
Time taken: Seven months
Maya
"A frog-like ogre is killing all the town's pigeons and preparing them for her pies, but a benevolent robot saves the day!"

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Ⓕ

Ⓕ Brief Encounter
» **Ian Lee**
Time taken: Seven months
Maya
"It's a love story about two people who meet by chance at a railway station."

> "The course also regularly invites top guest speakers to lecture as well as to hold workshops in order to give the students a real insight"
>
> **Marisse Mari,** principal lecturer in Design

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